

## Inside Dope

By GEORGE  
F. TAUBENECK



Learn to live and laugh —  
thus delay your epitaph

**Stories of the Week**  
**Add Definitions**  
**Gags of the Week**  
**Air Conditioning Report**  
**Hilarious Hobby**

### Stories of the Week

At the premiere of an all-about-the-Navy film, a Hollywood television announcer grabbed a Big Brass Sleeve and perorated:

"Here we have the Navy's greatest hero, Admiral Nimitz. Please speak into this microphone, Admiral Nimitz."

Answered the Admiral, briefly and gruffly:

"My name is King."

Texas rancherette spent a quiet winter embroidering ump-tween cattle-brands all over a blouse, including the sleeves. Proudly she wore it to a beef-producers' convention. First appraisal she heard in the lobby of a Ft. Worth hotel:

"Sure looks like that female critter has changed ownership a lot."

### Add Definitions

**Capital Punishment:** income tax.

**Recession** — a period when sales are down 5% and staff meetings up 25%.

### Gags of the Week

A sack dress should be worn by only two types of women: those who are pregnant, and those who don't want to be.

Some people have made an art of being slow to pick up the check. You really have to hand it to them.

Nothing deteriorates your car so fast as your neighbor's buying a new one.

Investigations prove men are better at solving problems—but only after women create them.  
—LESTER D. KLIMEK.

When a man is putty in his wife's hands, she's sure to chisel something out of him.—EDNA MAY BUSH.

Not so many kids are running away from home these days. The average television set is too heavy to carry.

Anybody who thinks he doesn't need a psychiatrist these days should have his head examined.—FRANKLIN P. JONES.

(Concluded on Page 9, Col. 1)

## FTC Orders Holland To End Deception

WASHINGTON, D. C.—The Federal Trade Commission has ordered a stop to what it calls "the deceptive sales scheme used by Holland Furnace Co., Holland, Mich., under which its salesmen pose as government or utility inspectors to gain access to homes and then, in many instances, dismantle furnaces without the owners' permission."

The company also is ordered to stop using "scare tactics," misrepresentation, and coercion to sell its furnaces, heating equipment, and parts.

The Commission, in an opinion by Commissioner Robert T. Secrest, denied the company's appeal from Hearing Examiner (Concluded on Back Page, Col. 1)

## Unions, Contractors To Huddle Sept. 8

WASHINGTON, D. C.—Contractors and union officers will gather here Sept. 8 to discuss the impact of recent National Labor Relations Board decisions on the industry, the National Association of Plumbing Contractors announced recently.

A joint industry program committee, composed of officers of the NAPC, the Mechanical Contractors Association of America, the United Association of Journeymen and Apprentices in the Plumbing and Pipe-fitting Industry, have worked out plans for the meeting.

NAPC said that three top officials each from the Refrigeration & Air Conditioning Contractors Association and from four other contractor groups would be invited to sit in on the meeting.

## Educational Eightball—Real or Imagined

Is our industry providing proper education and training for engineers, dealers, servicemen, apprentices, key executives? Are servicemen adequately trained? Is there really a shortage of engineers in our industry? Just where does our industry stand in the all-important area of training and education AND where do we go from here?

"A REPORT ON EDUCATION" beginning in the Aug. 18 issue of the NEWS supplies some answers to these questions and others.

At a time when all America is re-evaluating its educational and training programs, Frank J. Versagi, Technical Editor of the NEWS, takes a particularly close and penetrating look at the over-all educational and training methods at all levels of the air conditioning, heating, and refrigeration industry.

Beginning with engineering colleges, Versagi in his series reviews technical institutes, trade schools, manufacturers' courses, correspondence schools, apprenticeship programs, licensing schools—in short, all aspects of education.

(Concluded on Page 25, Col. 4)

## August Weather Prediction

WASHINGTON, D. C.—Above normal temperatures are predicted for the south Atlantic states and over the western half of the country, except for Nevada and adjacent areas, the U. S. Weather Bureau predicted in its 30-day outlook for the month of August.

Temperatures in the northeastern quarter of the nation (north of a curve from Wash- (Concluded on Page 25, Col. 4)

## Commercial Refrigerator Sales Showing Marked Rise

CHICAGO—The commercial refrigerator industry, after a slow start in the early part of the year, has found business picking up markedly in the past couple of months, to the point that sales for the first half rose to within 4% of the figure for the comparable period in 1957, it was reported at the annual

meeting of the Commercial Refrigerator Manufacturers Association here late last month.

The fact that sales are close to the first half of 1957 figures are significant in view of the fact that most of the decline that dropped 1957 sales behind the near-record sales pace of 1956 came in the last half of the year.

Members of the CRMA were attending the organization's 25th anniversary meeting, and after taking a critical look at the progress the industry has made over the years, concluded that it is still a "good business," with an attractive outlook for future growth.

In the meeting conducted by Roger D. Jacobs, executive vice president, the Warren Co., com- (Continued on Page 6, Col. 3)

## Year-Round Gas Units Hit 3,436 For First 6 Months

NEW YORK CITY—A total of 3,436 year-round residential gas air conditioning units were shipped during the first six months of 1958, compared to 1,305 units shipped during the first six months of 1957, the American Gas Association said.

The industry forecasts shipments in excess of 7,000 residential gas units for 1958 compared with 2,467 shipped in 1957, according to W. W. Selzer, chairman of the AGA air conditioning committee.

Selzer said the marked upturn in sales of year-round gas units was due to increased sales promotion efforts by gas utilities, to improvements in design and operation of gas air conditioning units, and to a substantial reduction in unit price in 1958.

He predicted the combination gas heating and cooling units would get a larger share of the market in 1959 as the gas industry puts increasing emphasis on building summer sales loads.

## Contractors' Ad Tells Why They Can't Yield To Union

DAYTON—The Dayton Association of Plumbing Contractors "put its case before the public" in newspaper advertising, following the calling of a strike by the local plumbers union.

Stating that the purpose of the advertisement was to "give you the facts on Why Union Plumbers Are on Strike," the advertisement began by stating:

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### RESIDENTIAL Air Conditioning

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## Merger Groups Start Work

WASHINGTON, D. C.—Some-time this month, the inter-industry committee of the National Association of Plumbing Contractors will meet to discuss the desirability of merging that association with the Mechanical Contractors Association of America, Inc.

A joint meeting between the NAPC committee and its MCA counterpart will not be held (Concluded on Page 25, Col. 2)

NEW YORK CITY—Preliminary planning for future meetings of the MCAA-NAPC Merger Study Committee took place late last month at the Savoy-Plaza hotel when the five-man Merger Study Committee of MCAA met with representatives of six local MCA associations.

Joseph H. Spitzley, Detroit, chairman of the committee, indicated that the meeting was held in accordance with the resolution passed by the 69th annual convention of the Mechanical Contractors Association of America, Inc., that empowered the board of directors to establish a committee to meet with a like committee of the National Association of Plumbing Contractors to study the possibilities of a merger of the two associations on mutually desirable terms.

The resolution as passed by the convention further required that prior to the first meeting with NAPC the Merger Study Committee meet with an advisory committee consisting of representatives of affiliated local associations desiring representation on the advisory committee.

"Before starting our planning in conjunction with NAPC, it was felt that the committee should have a chance to hear firsthand the opinions and provision that our own local asso- (Concluded on Page 25, Col. 2)



# 345,000 Autos Air Conditioned In 9 Mos.

DETROIT—About 345,000 air conditioners were installed on automobiles in the United States between October, 1957 and June 30, 1958, Ward's

Automotive Reports announced recently as a result of a survey. The automotive trade paper said this included 177,643 factory equipped new cars plus more than 167,000 units put on by dealers and independents.

Factory-installed air conditioners amounted to an average of 4.7% of new car factory output, as compared with 3.7% for the entire '57 model year and 2.7% in 1956.

Factory installations averaged 19,700 a month this year as against nearly 19,500 in 1957. Dealer-independent rate of installation, however, jumped to 18,600 units a month from 13,200 units last year.

Ward's attributed the rapid rise of independent installed units as compared to factory installed to lower prices for "hang-on" units.

Ward's gave this break-down of factory installations for 1958 model year through June 30 by manufacturers:

Manufacturer	Units Installed	% of Output
General Motors Corp.	124,530	6.4
Ford Motor Co.	22,683	2.2
Chrysler Corp.	24,782	4.2
American Motors Corp.	5,460	3.8
Studebaker-Packard	188	0.4

# Compressor Shipments Still Slow, 1.4 Million Move In 1st 4 Mos.

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies during the first four months of 1958 continued at the level which marked earlier months of this year—about 25% under comparable shipments in 1957, it is reported by Geo. S. Jones, Jr., managing

director of the Air-Conditioning & Refrigeration Institute.

The figures, which cover bodies for compressors used in all air conditioning and refrigeration equipment except household refrigerators, were compiled from reports to ARI by manufacturers whose output is estimated to be in excess of 95% of the industry, he said.

Actual shipments for the first four months this year totaled 1,421,489 units, compared with 1,919,538 units in the same period of 1957. Slight gains were noted in shipments of 2-hp. and 1/2-hp. bodies, but the declines of all other categories brought about the over-all decrease of almost a half-million units.

April shipments this year totaled 361,081 units, compared with 526,305 in April of last year.

Shipments of compressor bodies for automotive air conditioning dropped from 210,312 units in the January-April 1957 period to 174,119 units in the first four months of 1958, according to ARI figures, a decline of about 12%.

Figures for compressor bodies, broken down by categories, together with the names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES (Except for household refrigerators)			
Shipments Including Exports			
Hp.*	April, 1958	Jan.-April, 1958	Jan.-April, 1957
1/2 & under	110,094	137,568	171,987
1/4	21,281	68,250	291,015
1/2	33,153	72,681	79,310
3/4	5,747	22,262	36,713
1	102,296	350,576	215,160
1 1/2	26,721	126,577	548,413
2	35,417	146,185	142,141
3	13,117	38,397	118,684
5	7,515	23,842	42,840
7 1/2	3,548	12,041	33,301
10	837	3,335	20,363
15	380	1,478	4,585
20	188	632	1,270
25	168	598	871
30	155	558	699
40	184	567	
50	133	436	12,340
60	87	326	
75	84	272	
100 & over	46	155	
Total	361,081	1,346,736	1,708,711
For automotive air conditioning—Total	44,853	174,119	210,312
For ammonia refrigerant—Total	166	634	515
Grand Total	406,100	1,421,489	1,919,538

\*For all refrigerants except ammonia (excluding units for automotive air conditioning).

†Combined in order to avoid disclosing the figures of individual companies.

‡Breakdown of 30 hp. and over not available for 1957.

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co.; Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co.; The Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by the reporting companies regardless of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are not included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

## KeepRite To Market Kold-Hold In Canada

LANSING, Mich. — Manufacture and distribution of "Kold-Hold" truck refrigeration equipment in Canada by KeepRite Products Ltd. of Brantford, Ont., Can. will begin in September, according to a joint announcement by J. R. Tranter, president of Tranter Mfg., Inc. here, and J. G. McMillen, president of KeepRite Products.

The line will be marketed in Canada as "KeepRite Kold-Hold" products.

## Fight To Save Kansas Dairy Act

TOPEKA, Kan.—The Kansas Supreme Court is expected to hear next month an appeal from a state district court decision that the Kansas Dairy Industries Practices Act of 1957 is unconstitutional.

The act, which, among other things, would forbid ice cream manufacturers to provide their

accounts with ice cream cabinets and other equipment, was voided by Judge Beryl R. Johnson because it violated the constitutional provision for equal protection of the law and due process.

Pertinent provisions of the Act were outlined on page one of the Aug. 4 issue of the NEWS.

# LOST space in your building FOUND with



**KRAMER**

## OUTDOOR COMPRESSOR

Why lose dollar-making storage and selling space to house compressors, when you can now use the Kramer Outdoor Compressor? The THERMOBANK COMPRESSOR SYSTEM is factory assembled, tested and run-in; it saves installation time and money.

The refrigeration industry again finds Kramer blaz-

ing a new path with its THERMOBANK SYSTEM—the original and only automatic re-evaporating, non-overloading, fastest hot gas defrost system—now engineered to perform unfailingly, not only in a heated space but in any unheated space or outside at any outdoor temperature.

WRITE FOR BULLETIN TC 406A

**KRAMER TRENTON CO. Trenton 5, N. J.**

45 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER



NEW CLAIMANT for title of world's smallest structure air conditioned for human comfort is 16-sq. ft. perch of Chicago flag pole sitter John Lynch. Here Edward Ross, of Temperature Equipment Corp., takes Carrier portable to Lynch, who sits 50 ft. above a six-story building and 180 ft. above the street. Trying to break sitting record of 73 days, Lynch was forced down after 53 days by an ulcerated tooth. The dentist refused to go up to him.

## Milwaukee Told To Adopt Water Fee

MILWAUKEE — The city of Milwaukee has been told that it must put into effect a \$10 per ton annual fee on air conditioners of more than 3 tons' capacity that are without water conserving devices.

State Public Service Commission has notified the city that it faces a \$1,000 fine for the water department and \$500 for city officials unless it complies with the PSC order, which was issued last Feb. 17. The order is intended to conserve water supplies during hot weather.

The fees are to be applied starting in January, 1959.

Protests by owners of large air conditioning equipment had prompted city utilities officials to propose a 10-year exemption for existing equipment.

City council is now considering two resolutions. One is to send a group of city officials to confer with PSC officials on the order. The other would set up a special committee to study the feasibility of setting up a surcharge for all who use more than average consumption from July through September, not just owners of air conditioning equipment.

## Herman Nelson Plans \$750,000 Addition

LOUISVILLE, Ky.—Detailed plans for a \$750,000 addition to the 25th St. plant of the Herman Nelson Div., in Moline, Ill., has been revealed by American Air Filter Co., Inc.

The new structure will contain 76,800 sq. ft. of floor space and will increase the present facilities by approximately 50%.

"Consolidation under one roof of parts now scattered in buildings throughout a ten-mile section of the Quad-Cities (Moline, East Moline, Rock Island, Davenport), is our most immediate goal," commented Howard M. Fitch, AAF vice president and general manager of the Herman Nelson Div.

## 400 Mfrs. Take Space In ASHAE Exposition

NEW YORK CITY — More than 400 manufacturers have engaged space at the 14th International Heating & Air-Conditioning Exposition, which is to be held Jan. 26 to 29, 1959 at the Convention Hall, Philadelphia, E. K. Stevens, exposition manager, announced here recently.

An additional area has been opened in the South Building to which incoming applications are now being assigned, he added. Already the Exposition has become larger than that last held in Philadelphia in 1955.

As heretofore, the Exposition will be staged under the auspices of the American Society of Heating & Air-Conditioning Engineers. The Society's 64th annual meeting will be held concurrently.

## G-E Explains Why 2 Departments Will Market Heat Pumps Next Year

BLOOMFIELD, N. J.—How come two separate departments of General Electric Co. will be producing and selling heat pumps next year?

Evidently some distributors for G-E's Air Conditioning Dept. have been wondering about that.

Recently the department mailed to all its distributors reprints of an article on heat pumps from the *General Electric Monogram*, a company-wide house organ, along with a reprint of a *Life* feature breaking the news of the Room Air Conditioner Dept.'s new "Thermaline" heat pump.

They were sent, a covering memorandum said, "for whatever clarification they may provide on products our company is

offering the industry."

The *Monogram* article shared honors between radical Thermaline that reverses the air flow instead of the refrigerant cycle and "Weathertron's" new split system.

"Why two models?" the *Monogram* asked. It's answer:

"The heat pump market is growing and the customer is more sophisticated about what he wants. Recently, Paul F. O'Neill, utility consultant for the Air Conditioning Dept., estimated there are well over 350,000 potential commercial heat pump installations waiting to be filled in the immediate future. . . .

"Management of the Room Air Conditioner Dept. expects Thermaline installations to toe

the half-million mark by 1961, hit 1.1 million by 1964.

"The Thermaline is primarily aimed at the customer who wants whole house heating and cooling through a series of individual units. . . . Weathertron on the other hand, aims at the customer wanting a central unit, and has found considerable commercial popularity."

## June Gas Furnace Shipments Up 22%

NEW YORK CITY—Manufacturers of gas-fired equipment for residential central heating increased their shipments during June 22.3% over the same month in 1957, the Gas Appliance Manufacturers Association announced recently.

Shipments of furnaces, boilers, and conversion burners numbered 91,000 units in June and 74,400 last year.



design for safe transit



## SAFE AS A BABY IN A CRADLE!

### EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

### ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

### ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

1500 lbs. (over 20,000 ft.) of straight, de-burred, square-cut correctly tempered copper tube is carried with "loving care" in specially built crates individually designed to suit customers' requirements. VIKING designed packaging preserves original finish and prevents in-transit damage to VIKING Thin Wall Copper Tube, because each length supports only its own weight!

VIKING painstakingly controls every aspect of the production of its tube, and as perfectionists, takes pride in delivering every foot of VIKING Thin Wall Copper Tube uniform and perfect.

It is because of VIKING'S pioneering in quality, uniformity and dependability that VIKING Copper Tube is today the first choice of the nation's leading manufacturers of air conditioning and refrigeration units and coils.



**VIKING**

COPPER TUBE CO.

CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER TUBE



## All May Air Views at RACCA Convention--

CLEVELAND — "Improved Teamwork Progress Clinic" is what the Refrigeration & Air Conditioning Contractors Association is calling its 13th annual convention, according to Tom Alexander, convention chairman.

The affair will be held in the Broadmoor hotel, Colorado Springs, from Oct. 12-14.

Special feature of the convention will be two clinics designed to develop closer relationship and cooperation among members. Clinics will be led by Dean Michael Kolivosky of Hillsdale (Mich.) college. He will use the Phillips 66 method to provide everyone with an opportunity to express his views. At the completion of the clinics, Dean Kolivosky will sum up results.

First clinic, scheduled for Monday (Oct. 13) morning, will

cover local association progress. The second, on Tuesday morning, will concern associations and mergers.

To start off the second clinic, the pro's and con's of mergers will be briefly pointed out by RACCA President C. A. Walling, Wilbur Hokom of the National Association of Plumbing

### McMahan Recovering From Auto Accident

FRESNO, Calif. — George C. McMahan, manager of Lillard's in Fresno, air conditioning wholesaler, was recovering at Community hospital here from injuries sustained in an automobile accident July 15.

McMahan is a leader in organizing educational courses for contractor personnel.

Contractors, William Moody of Mechanical Contractors Association of America, and others.

Guest speakers at the convention include John M. Rhoades, president of the National Association of Plumbing Contractors; Peter T. Schoemann, general president of United Association; and George F. Taubeneck, editorial publisher of AIR CONDITIONING & REFRIGERATION NEWS.

Social highlights include a reception and cocktail party on Sunday evening, a family ox roast and western hoe down on Monday evening, and annual dinner-dance Tuesday evening.

One "Idea Trading Post" will help local association secretaries improve benefits for members. Another will blueprint the formation and operation of a local association.

## ARI Issues Standard on Unitary Heat-Operated Air Conditioning

WASHINGTON, D. C. — Recognizing the development of new types of heat-operated air conditioning units, the Air-Conditioning & Refrigeration Institute has issued the first ARI standard for such units, it was announced by Geo. S. Jones, Jr., ARI managing director.

Titled ARI Standard 250-58, "Unitary Heat-Operated Air Conditioning Equipment," the new standard applies to units "whose major energy input is in the form of heat—either directly from gas or oil combustion, or from such energy sources as hot water, steam, or electric resistance units."

The gas utility industry has recently redoubled its efforts to develop and market gas-operated air conditioning equipment,

and a number of manufacturers are producing such equipment, which also is usable with other heat sources, the ARI noted.

The new standard applies to factory-made "residential, commercial, and industrial heat-operated air conditioners or matched assemblies . . . which normally include an evaporator or air-cooling coil, a heat-operated cooling apparatus, and may include a heating function as well. . . ."

However, the publication does not apply to the rating and testing of individual assemblies, such as boilers or coils, for separate use. Where such equipment is provided in more than one assembly, the separated assemblies are designed to be used together, and the requirements of rating outlined in the standard are based on the used of matched assemblies.

Like ARI Standard 210-58, "Unitary Air Conditioners," to which it is a companion, the new publication provides that "Standard ratings relating to cooling capacity shall be stated as the total cooling capacity and expressed only in terms of B.t.u. per hour in multiples of 1,000 B.t.u. per hour; or equivalent tons, expressed in multiples of one-tenth of a ton (one ton being the equivalent of 12,000 B.t.u. per hour)."

Developed by ARI's Engineering Department under the direction of the Engineering Committee of the ARI Unitary Air Conditioner Section, the new publication "gratefully acknowledges the assistance, cooperation, and endorsement of the National Warm Air Heating & Air Conditioning Association in the preparation of this Standard."

At the same time, ARI announces that references to heat-operated air conditioning equipment in ARI Standard 210-57 are superseded by ARI Standard 250-58.

Copies of the new standard may be obtained from Air-Conditioning & Refrigeration Institute, 1346 Connecticut Ave., N.W., Washington 6, D. C., for 35 cents each.

### W. A. Landers Heads Mediation Group

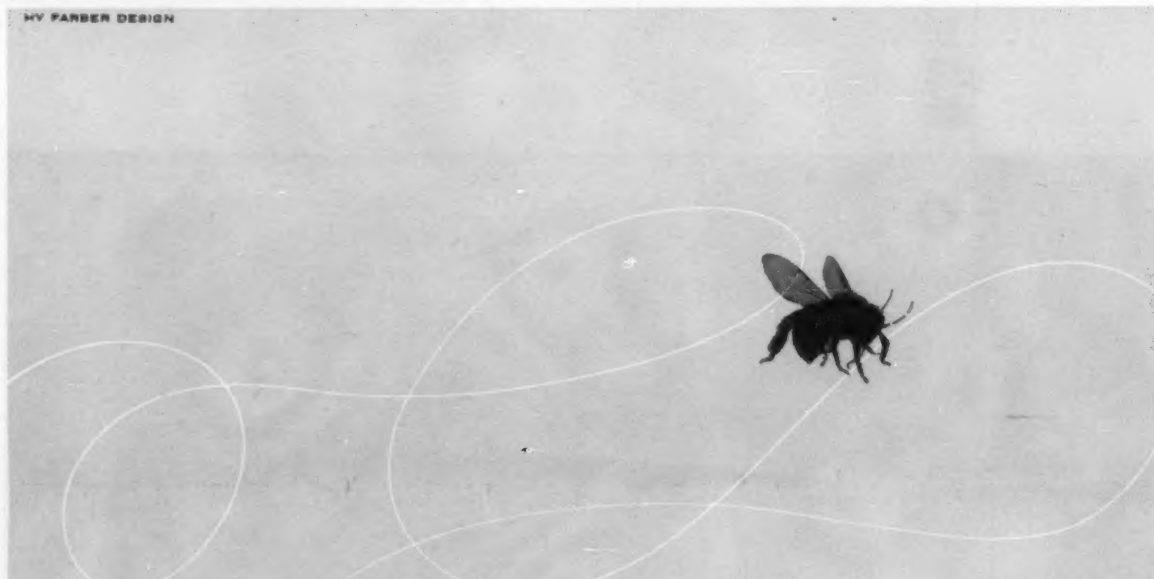
WASHINGTON, D. C.—William A. Landers of the National Association of Plumbing Contractors has been elected chairman of the Industrial Relations Council, mediation arm for labor contract disputes in the plumbing and pipefitting industry.

Thomas P. M. McLinskey of the United Association was named vice chairman. William C. O'Neill, UA, was elected treasurer and James G. Morris, NAPC, continues as secretary.

### Acme Strike Ends

JACKSON, Mich. — A two-week strike at Acme Industries, Inc. ended last week with ratification of a new contract between the company and Local 755 of the Allied Industrial Workers of America, AFL-CIO.



BY FARNER DESIGN




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For evaporative condensers,  
air handling units and heavier  
heating equipment, Utility  
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production, combining efficiency  
with flexibility, strength  
with perfect dynamic balance.

Ranging in diameters from  
10 to 36 inches, the rugged blower  
wheel has 64 specially curved  
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## Salesman of Distinction

## Engineering Know-How, Ingenuity Solve Unusual Problems

JACKSON, Mich.—If the air conditioning industry ever starts handing out "salesman of the month" awards, William N. Hart of Leslie, Mich. is sure to win himself a handful of ribbons, says Acme Industries, Inc.

"Bill" Hart has been traveling the main highways and back roads of Michigan for Acme for five years.

It's not the volume of sales that makes Bill Hart unusual in the sales class, although, obviously, he chalks up the orders with the best of them.

What Bill is known for around the Acme plant is his abundance of that old American ingredient, ingenuity. It's not how many of Acme's liquid chillers, air handlers, water towers, and air conditioners he sells, it's how, and to whom, that makes a story.

Take that company in Jackson. An evaporative cooler in use there wasn't performing the job it was supposed to perform, the cooling of a sodium-quenching solution used in heat treating. Hart tested the conditions of service and found the temperature of the 10% sodium-chloride solution used as a quench had to be maintained at 85° F.

Cost prohibited the installation of the type of system which would do the job properly, and it looked as if Hart might be out of a sale. But he looked around, thought a bit and convinced the company officials they could have the performance required without the cost involved.

The evaporative cooler soon was remodeled into a water tower. This was used to cool water which was circulated through a fluid-to-fluid heat exchange unit which in turn cooled the quench.

The heat-exchange unit was a through-tube chiller, in which the sodium chloride solution was pumped through the cleanable tubes, and water from the remodeled evaporative cooler was recirculated over the baffles in the shell side.

"They may have to sacrifice a few degrees in the summer months when the outside air doesn't cool the water in the tower sufficiently," Hart says, "but for the savings involved, they are well satisfied."

Then there was the case of the southern Michigan industry which now is saving roughly 22,000,000 gals. of water monthly with the use of 14 Acme water towers which are set up inside the plant.

Bill helped solve the company's problem—and made a sale—when it became apparent that the high cost of piping and installation of large-tonnage water towers on the roof would offset any savings realized with the re-use of 22,000,000 gals. of water.

Hart sold two other companies equipment by showing them how Acme equipment could be used to take the moisture from compressed air, an important factor in some manufacturing. For this, he used an Acme Dry-Ex chiller and ran high-pressure air through the

shell side instead of water. The temperature of the refrigerant used, 40° F., reduced the dew-point of the air to 41° F. or 42° F., thus removing as much water as was necessary for the processes involved.

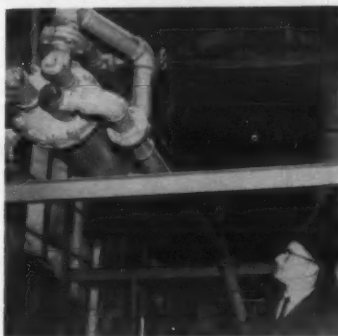
In a brewery, Hart studied a problem and showed how, with the use of Acme cooling towers, the temperature of bottled beer could be lowered from 146° F. to the temperature the brewery felt necessary for quality.

Prior to that time, it was thought the temperature could not be lowered that far without using either well water or mechanical refrigeration. The results were that the brewery lowered its water consumption ratio of 15 bb. water to 1 bb. beer to an 8 to 1 ratio.

For a plastics corporation, Hart checked the cost of city water the firm had been using to cool its injection molding machines and showed officials

how a cooling tower installation would pay for itself in 18 months. A comparatively long study of the firm's problems had to be undertaken because of the complexity of maintaining hydraulic fluid in the machines at 120° F. while chilling other parts of the molds so the plastic would set rapidly enough to insure high production rates.

And an aluminum die casting corporation is saving 120 gals. of water a minute these days because Bill Hart showed officials how, with an Acme cooling tower system (naturally), dies could be cooled as efficiently as before and still save water.



WILLIAM N. HART, salesman for Acme Industries, Inc., looks over an installation he designed for cooling a sodium-quenching solution used by a Jackson heat-treating firm.



"The new PPG Glasfloss Safety-Grille filters definitely improved the service of our air filtering system," states Mr. Arthur C. Kercher. "Their one-piece chipboard construction has eliminated blow-outs and cut replacement time by 40%."

## "New PPG Glasfloss® Safety-Grille\* filters eliminated blow-outs, reduced replacement time by 40%"

\*TRADE-MARK

reports Mr. Arthur C. Kercher, Air Conditioning Engineer, Joseph Horne Co., Pittsburgh, Penna.

"The new PPG Glasfloss Safety-Grille filters greatly improved our air filtering operations at Joseph Horne Co.," states Mr. Kercher.

### NO BLOW-OUTS

"With the older type metal grille filters previously used, we experienced frequent blow-outs. Air is drawn through the filter bank at a high velocity; but since switching to Glasfloss Safety-Grille filters, the blow-out problem has been eliminated.

### SAFER, FASTER INSTALLATION

"The new chipboard grille of the Safety-Grille filters is superior to the metal grille filters we previously used. Workmen now install the filters 40% faster than before,

because there is now no danger of being cut by sharp metal edges."

### LONGER SERVICE, COST SAVINGS

"The sturdy one-piece construction of the frame and grille means that we cut costs through their long usage (12 to 16 weeks) and their ease of handling."

### DO YOUR AIR FILTERS GIVE YOU THIS GOOD SERVICE?

The new Glasfloss Safety-Grille filters will improve your air filtering system. They are available in a complete range of sizes. Call your local Glasfloss Distributor or PPG Warehouse for top service.

### A PRODUCT OF PITTSBURGH PLATE GLASS COMPANY

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, Minneapolis, New York, Philadelphia, Pittsburgh and St. Louis.



SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS  
PITTSBURGH PLATE GLASS COMPANY



**It Ain't In Texas****World's Largest Supermarket Has Array of Refrigeration Equipment**

NEW ORLEANS—The largest retail supermarket in the world is not in Texas—yet. Schwegmann Bros. Giant Super Market, billed as the world's largest, is located in New Orleans.

As impressive as its size is the array of refrigeration equipment required to protect the produce. The units, all of which are Dunham-Bush, include hot gas defrost low temperature unit coolers and 14 standard unit coolers.

This equipment serves two meat cooler rooms, a produce room, two fish storage rooms, a dairy room, a delicatessen storage, and a poultry room, it is pointed out.

Some idea of the immensity of the store can be gathered from these facts: it covers 244,000 sq. ft. of floor area, has 35 check-out counters, 1,500 shopping carts, and parking facilities for over 2,000 cars.

The electricity used daily (267 connected horsepower) would supply a city of 10,000. Seven hundred prescriptions are filled daily in the drug department; 4,000 lbs. of hamburg are sold daily.

Refrigeration contractor on the job was United Refrigeration, Inc., New Orleans, and the Dunham-Bush equipment was supplied through Acme Refrigeration of New Orleans, according to the announcement.

**Commercial Refrigerator Business Picks Up Markedly--**

(Continued from Page 1)

pleting his year of office as the association's president, a panel composed of William B. McMillan, president, Hussmann Refrigerator Co.; Robert L. Tyler, president, Tyler Refrigeration Corp.; and J. D. Harris, president, Warren Co., had been assigned the task of preparing a "balance sheet" to disclose positive and negative factors in the industry's present makeup, and to analyze its long-range potentialities from the standpoint of investment and "career satisfaction" factors.

After hearing their comments, the group agreed that the commercial refrigerator business has not been too rewarding, profit-wise, in recent years ("we have helped many of our food store customers become millionaires" was one per-

manent comment). Yet the fact that it is directly linked with some aspect of consumer food service has provided and should continue to give it a high degree of stability unmatched in most other manufacturing activities.

As long as perishable foods form the mainstay of an expanding population's diet, it was emphasized, there will continue to be a corresponding need for refrigerated space in which to store and display them or from which it is dispensed.

**Distribution System Seen as Stable**

Tyler pointed out the stability of the industry's distribution outlets, pointing out that of 350 of his firm's outlets, only one had been lost through bankruptcy. However, he had two general recommendations for

helping the industry to boost its volume to "what it should be, four times its present extent."

One recommendation was to give the distributors more products to promote and sell, so that the commercial refrigerator manufacturer wouldn't find his line competing with too many non-commercial refrigeration products for the distributor's selling time.

McMillan traced some of the history of the commercial refrigerator field. He pointed out that when CRMA was born, a large part of the market his and other founding companies depended on consisted of the small "papa and mama" type of store. In those days the national manufacturer of equipment had competition from scores of smaller fixture builders.

**Fixture Business Has Become 'Big Business'**

However, with the emergence of the supermarket and the growth of the food chains and the voluntary food store co-op groups, the refrigerated fixture business has become "big business" with individual projects in some instances running into six figures. Consequently the smaller, local type of manufacturer has gone out of the business.

The larger manufacturer and distributor have forged ahead by their ability to keep abreast of, and sometimes guide, the changes that have taken place in food distribution methods, McMillan pointed out.

In order to insure progress, said W. J. Stelpflug, veteran industry executive, there should be more effort to create a desire in the customer's mind for the products the industry feels he needs, rather than to just give the customer what he says he needs or wants.

One thing that has impeded the progress of the industry, said J. L. Kaufhold, Weber Showcase & Fixture Co., is that there have been too many "order takers" and not enough individuals with real sales knowledge of the industry's products, among those merchandising equipment.

**New Blood Lacking**

One factor that may be impeding growth, Tyler pointed out, is a lack of new blood in the industry's manpower. His company, he said, has tried to overcome this by going after young men in the 20-30 years age bracket, with the theory that the ratio of newcomers to men reaching retirement ought to be 1 for 1 over three generations.

However, the picture generally looks quite bright, and Hugh Cooper, McCray sales manager, pointed out that there obviously was no recession in the food business, his figures showing that food store volume in some instances is running as much as 15% above 1957.

This outlook was bolstered by Harry Corbin, C. V. Hill & Co. sales vice president, who offered the firm prediction that overall industry volume would at equal last year's total and offered the chance of going ahead



The closed-cell structure of Armaflex seals out air and moisture, prevents dangerous condensation.

## Now you can stop harmful condensation —even at 0° F.—with Armstrong Armaflex



Look for Andy Armaflex on displays, windows, and door decals. He identifies the wholesaler who sells Armaflex.

With the new 3/4" thick Armstrong Armaflex Pipe Covering, you now can stop condensation on fluid lines operating as low as 0° F. Armaflex is a highly efficient, flexible insulation, with a k-factor of 0.28 at 75° F. mean temperature. Its closed-cell composition needs no separate vapor barrier, effectively seals out air and moisture. At all temperatures from zero to 200° F., you can use the economical amount\* of Armaflex to stop condensation or save heat, because it comes in a complete range of nominal wall thicknesses—3/8", 1/2", and the new 3/4".

You can do a faster, more economical job with Armaflex, too. Armaflex cuts labor costs by as much as 50%, compared with application costs for conventional pipe coverings. Just slip Armaflex over piping before connections are made or slit and snap on. Joints are sealed with Armstrong 520 Adhesive. Fittings are easily insulated with miter-cut pieces of Armaflex.

\* Recommended Armaflex thicknesses for various service conditions are listed in a free, descriptive booklet. For your copy, write to Armstrong Cork Company, 2208 Parsons Street, Lancaster, Pa., or see your Armaflex wholesaler.

**Armstrong INSULATIONS**



a bit. With an increasing mortality among smaller, independent food stores, members were questioned as to whether this was resulting in lowered manufacturers' sales to distributors. In general it was found that there was little change, and that some sales improvement was being shown among top-ranking dealers.

A prepared statement by John Romadka, Federal Refrigerator Co. president who left the meeting early to attend the funeral of Charles Dieringer, founder of Federal, suggested that CRMA set up a special committee to explore the problem of creating new needs or wants among the industry's customers, which would report back on opportunities for wholly new products that can be added to the present line, such as automatic vending machines.

For the food service equipment segment of the association, whose activities are chiefly concerned with reach-in refrigerators and companion items used in food service operations, there is already enough business in actual prospect to keep this type of manufacturer busy for the next 10 years, declared William McCall, McCall Refrigerator Co. president.

He explained that his estimate was based on the extensive nationwide tollroad program, the indicated high rate of new construction in the motel and institutional fields, the rapid growth of in-plant feeding facilities as more and more operations "go suburban," and an already substantial modernization movement throughout the restaurant business.

Status of the standards project being carried on for the group by the National Sanitation Foundation was reported by C. K. Litman, president, Koch Refrigerators, Inc.

#### Labor Relations Discussed by Panel

Today's labor relations "atmosphere" was another topic explored by a special panel of executives on the day's program. Members were John R. Caulk, Jr., executive vice president of Hussmann; Frederic A. Celler, sales vice president, The Brewer-Titchener Corp.; and H. D. Thompson, vice president, Piggly-Wiggly Corp.

The group was warned not to allow themselves to be lulled into expecting any lessening of pressure from organized labor for higher wages and other concessions, which might influence some manufacturers subscribing

to that theory to "take it easy" with their production efficiency and other cost-cutting programs. If anything, the panel counseled, since it is obvious that costs all along the line can go only in one direction, up, a stronger emphasis than ever should be placed on improving production techniques of every kind.

The annual election of officers resulting in the following being named to serve as the CRMA executive committee for the 1958-1959 fiscal year: president, William Fogel, president, Fogel Refrigerator Co.; vice president, John H. Coolidge, Sherer-Gillett Co.; treasurer, Frederic A. Celler, with John Romadka and Harry N. Corbin as directors.

Paul Sullivan, executive secretary of the association, was honored with a gift for his services to the group, spanning its entire history, and a special

"old timers table" at a luncheon paid tribute to such old timers as W. B. McMillan of Hussmann, Millard Mayer, Koch Refrigerators; Richard H. Friedrich, Friedrich Refrigerators; Emory Fowler, Fowler Refrigerator Co.; and two who are no longer active in the field—Ernest L. Stultz, formerly of Viking Refrigerator Co.; and A. J. Maas, retired head of Percival Refrigerator Co.

#### New Butter Processing Plant To Double Output

LOS ANGELES—A processing plant with freezer units designed to hold temperatures of -25° F. is being constructed here for the Wilsey Bennett Co., custom packager of butter.

This will double the firm's facilities in the Southland area. Offices will be electrically heated.

#### United Refrigerator Appoints Cherry

HUDSON, Wis.—Preston E. Cherry has been appointed sales director of United Refrigerator Co., it was announced by Jack Gordon, vice president.

For the past six years Cherry has been associated with Amana Refrigeration, Inc., first as western regional assistant sales manager and more recently as eastern regional sales manager.

In his position with United, Cherry will be particularly concerned with the sales of freezers by food plan dealers. The company plans to set up field warehousing throughout the country.

Another United product to which Cherry will give particular attention is the "Porta-Fridge," a portable electric refrigerator that weighs 78 lbs. and has a 1.15-cu. ft. capacity.

#### Dairy Equipment Co. Buys Berg Selector

MADISON, Wis.—Dairy Equipment Co. here has acquired Berg Selector Co., also of Madison, according to Charles K. Albrecht, Dairy Equipment president.

Dairy Equipment, which purchased Berg's outstanding stock for an undisclosed amount of cash, produces bulk milk storage coolers, milk truck tanks, and egg storage coolers. Berg, now a subsidiary of Dairy Equipment, manufactures merchandise display cases.

#### For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

## SUNSET HELPS YOU TURN REFRIGERATION KNOW-HOW INTO Extra Profitable FARM BUSINESS



This Sunset "Space Saver" Bulk Milk Cooler is typical of the thousands of Sunset Coolers installed on farms every year. Note the simple compressor hook-up—the rugged, sturdy, all stainless steel tank construction.

Every dairy herd in your area is potential profitable business for a refrigeration expert. Here's why. In just a few years, most dairy farmers will install a bulk milk cooler, both to save labor and to meet strict milk quality requirements.

That's where you come in. Bulk milk coolers are big ticket refrigeration units. Selling—and servicing—they can be a highly profitable business. That's why you should know about bulk milk cooling—and here's why you should know about Sunset.

**SUNSET IS EASY TO SELL:** Sunset Bulk Milk Coolers set the pace for the industry. Farmers know them, respect them. Sunset gives lowest cooling costs, precision manufacturing, trouble-free operation. Aggressive advertising constantly reminds farmers of these advantages—pre-sells them on Sunset.

**SUNSET IS EASY TO SERVICE:** Famous Whirlpool engineering keeps controls simple, important parts easy to replace or repair. Installation is easy, too. That's why Sunset Coolers are the favorite of refrigeration men—why Sunset Dealers have few service calls.

**SUNSET'S DEAL IS HARD TO BEAT:** When you sell Sunset, you sell the leader. Yet Sunset Coolers are competitively priced.



with "POSITIVE REFRIGERANT CONTROL"  
SUNSET EQUIPMENT CO.

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And when you sell Sunset, you get help . . . free factory training, direct sales assistance from Sunset sales representatives, inquiries produced by Sunset's national advertising. Sunset does everything possible to help you make money.

Several high potential bulk cooler territories are now available. For full details, write to the address below. Ask how you can become a Sunset Dealer and start getting your share of the big, booming, profitable bulk cooler market.

**STRONG SELLING HELP:** Here are just a few of the selling helps available free to Sunset Dealers: Reprints of national ads, direct mail pieces, envelope stuffers, ad mats, radio commercials, sound strip film, and the big Sunset Profit Book that tells prospects everything they need to know about profitable bulk milk cooling.



#### PICK YOUR COOLER FROM 3 DESIGNS . . . 11 DIFFERENT MODELS



All Sunset Coolers are built to last . . .  
Easy to clean . . . Economical to operate

## NOLIN

Leads the Field



WITH THE  
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MONTGOMERY, ALABAMA



## Rapid Pull-Down Cited as Major Problem In Car Air Conditioning at ASRE Session

### Suggestions Offered To Minimize Difficulties

MINNEAPOLIS—Rapid pull-down of temperatures, which may reach 125° F. or more in a parked car, is the greatest problem in automobile air conditioning today, according to J. D. Loveley, assistant chief engineer of car air conditioning for Chrysler Corp.

Loveley was one of three who presented papers at the first technical session devoted entirely to automobile air conditioning held by the American Society of Refrigerating Engineers at its 54th annual meeting here.

Air flow and distribution was discussed by R. D. Foley, divi-

sional engineer, American Motors Corp., and controls were reviewed by W. H. Jackson, supervising engineer, Harrison Radiator Div., General Motors Corp.

The person who leaves a 75° air conditioned office wants the car temperature to be brought down to that point quickly, and this can be done, Loveley indicated, if he can drive at 25 to 50 m.p.h. but not in the slow, stop-and-go city traffic he usually encounters.

Several things in design and operation that can be done to help solve this problem were suggested by Loveley:

1. Provide good insulation in the car, especially at the dash, roof, and floor.
2. Use heat-absorbing glass.
3. Provide effective sealing against air infiltration.
4. Light colored or more reflective paints, particularly on the roof, will reduce heat gain.
5. Directional air outlets permit "spot cooling" of passengers.
6. Operation on 100% recirculated air will reduce pull-down time.
7. If thermal mass of evaporator system is kept low, less cooling capacity will be devoted to dropping temperature of coil, etc.
8. Park in shade or garage

and leave windows open a bit.

9. Drive in low gear in slow traffic to increase compressor speed and capacity.

Answering a question from the floor on the subject of car overheating, Loveley explained that this problem was fully recognized.

"Usually we speed up the radiator fan considerably; on larger cars a slip clutch is used to reduce fan speed at high car speeds. There's also the problem," he said, "of air recirculation under the hood. There is little space beside today's engines to get air past the engine. We feel that this is still a marginal problem, though. If everything operates correctly, then things are okay."

To a later but related question about using a variable or constant speed compressor drive, Jackson of Harrison commented:

"We'd all like a two-speed

drive for the compressor, as well as for the radiator fan, and water pump. Devices for this now available either are not dependable or too expensive. And if you increase compressor speed at low car speeds, you'd also have to increase radiator fan speed, and it would be a good idea to increase water pump and generator speed."

### Main Functions of Controls

In his talk on controls, Jackson explained that their four main functions are to control refrigerant flow, air temperature, air distribution, and air volume.

Refrigerant flow control is achieved with thermostatic expansion valves, the non-adjustable type now being in general use, he said.

"We have tried capillary tubes, but we don't like to take the loss in performance that is involved," Jackson declared.

Temperature control is required both to prevent icing of the evaporator, which can occur at high compressor speeds and low ambient conditions, and to permit passenger adjustment of cooling output above the icing point, he explained.

Two methods of such controls in common use are (1) cycling a magnetic clutch by an adjustable thermostat or pressure-sensitive switch, and (2) by-passing refrigerant around the evaporator.

By-pass valve employed, Jackson continued, can be of the non-modulating solenoid type or modulating types responsive to temperature or pressure.

### Expresses Preference For Modulating By-Pass System

Expressing preference for the modulating by-pass system of control, Jackson explained, in answer to a question, that "it gives better performance at high car speeds. Whenever you cut-out and cut-in a magnetic clutch, you lose 2° to 3°."

Control of air volume is obtained by use of a two or three-speed blower, and built-in systems usually provide also for manual selection of recirculated air (for maximum cooling) or outside air, Jackson said.

Most comfort is obtained with a front-end type system that directs cool air at low velocity close to the roof, permitting this cool blanket of air to descend slowly over the occupants, Foley claims.

Passengers don't like to be subjected to a concentrated stream of cool air at high velocity, certainly not after the initial pull-down period, Foley asserted.

Thus, he indicated, although a hang-on unit can produce satisfactory temperatures, it does not produce satisfactory passenger comfort.

Commenting on the admittedly controversial question about supplying outside air, Foley said American Motors has found that approximately 20% outside air suffices "to handle the odor and stuffiness feeling."

He also cited data showing how much outside air enters a car at various speeds: at 20 m.p.h., 20 c.f.m.; 30 m.p.h., 35 c.f.m.; 40 m.p.h., 49 c.f.m.; 50 m.p.h., 61 c.f.m.; 60 m.p.h., 75 c.f.m.



The situation will always be well in hand, when you're supplied by a complete air conditioning and refrigeration wholesaler. And when you need a refrigerant, be sure you ask for Freon®—the refrigerant backed by more than 26 years of Du Pont technical and manufacturing leadership. "Freon" sets the industry's standard for purity and dryness.

SALES AGENTS: Ansul Chemical Co., Marinette, Wisconsin; and Virginia Smelting Co., West Norfolk, Virginia

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## Inside Dope

By GEORGE  
F. TAUBENECK

(Concluded from Page 1, Col. 1)

### Air Conditioning Report

Here's a true story:

Friend of ours decided to buy a window-type air conditioner for his bedroom. He walked into a store which had a handsome display of same. Nobody was in the showroom except a pretty girl seated idly behind a small desk.

"Miss," he said, "I'd like to buy one of these air conditioners."

She excused herself for a moment, and disappeared through a door. Upon returning she advised:

"Would you please come back tomorrow? All our salesmen are in a meeting with a sales promoter from the factory."

### Hilarious Hobby

Hopefully we trust that all readers of this column are aware that "Dope" has been circumnavigating—visiting subscribers all around the world again.

Upon arrival back home we faced a mountain of letters, a portion of which necessarily may remain unanswered for awhile yet. Here's hoping you'll understand the delay. Among such as-yet-unacknowledged letters are contributions to "Dope's" collection of typographical errors.

Herewith is an accumulation of these pleasurable contributions:

Pat was the only girl the Duke danced with. "He told me I had the most wonderful," she said later, with a sigh.—*Detroit News*.

Bridegroom Nervous, So Police Help.—*Los Angeles Times*.

Lord Colum Edmund Crichton-Stuart was a son of the third Marquess of Bute, an island in the Firth of Clyde.—*New York Times*.

Dorothy sat smiling — as poised a young lady as ever turned out by a girls' finishing school—except for an occasional mixup in grammar when she spoke.—*Detroit Free Press*.

The current season of the Winston-Salem Gallery of Fine Art coincides with a mass hanging and an open house.—*Winston Salem Journal*.

He Kissed His Wife—And the Washer Blew Up.—*Rochester Times-Union*.

The operator of the other car, charged with drunken driving, crashed into Miss Miller's rear end which was sticking out into the road.—*Osage (Iowa) Press News*.

Rayburn said there was a spit between the G.O.P. on the Hill and "modern Republicans" in the White House.—*Chicago Tribune*.

Warn Women of Cans With Bulging Ends.—*Wakefield (Mass.) Daily Item*.

Cuban Building Takes Big Jump.—*Grand Forks (N. D.) Herald*.

Father of 11 fined \$200 for failing to stop.—*Lancaster (Pa.) News Era*.

Christmas Island was discovered by Capt. James Cook on Christmas Day, 1777, and was so called because it was discovered on Easter Sunday, 1772.—*Buffalo Evening News*.

Board Approves Sex In Very Modified Form.—*Toronto Globe and Mail*.

Lottery Decides Who Gets Best Dates in Park Cabins.—*Washington Evening Star*.

Mingling of Sexes in College Favored, 18-7, by Girls at Boston Lying-in Hospital.—*Boston Traveler*.

But the salary was good and I have a widowed mother living with men so I hesitated.—*St. Joseph (Mo.) News-Press*.

Thieves broke into the home of Allan Bernin, 8276 Elmhurst, yesterday and escaped with cash, several blonds, and a diamond valued at \$150.—*Detroit News*.

Traffic Judge Is Retired to Stud.—*Los Angeles Herald & Express*.

"Change Your Wife Through Prayer" will be the sermon subject Sunday.—*Parkersburg (W. Va.) News*.

Saw Man, Dead Girls Together.—*Benton Harbor News-Palladium*.

Three men make and repair the 5,000 Venetian blonds used throughout Richmond's 56 pub-

lic schools.—*Richmond (Va.) News Leader*.

Harmony Park Ballroom asked a permit to operate under a new dance ordinance.—*Santa Ana Register*.

Although adult bald eagles are heavier than young ones, the immature eagles often have larger dimensions because of longer fathers.—*Glendale News-Press*.

The Great Western Livestock Show hits a high spot today.—*Los Angeles Herald-Express*.

Mrs. Johnson said "these stories about being drunk are absurd."—*Detroit News*.

The calls started at noon Saturday night.—*Columbus Dispatch*.

Miss Blank said she usually

dates short, blond boys and prefers sousehners.—*Macon Telegraph*.

Some 300 newsmen, photographers and curious onlookers were fathered as the 63 Russians stepped from the plane.—*Los Angeles Times*.

Although it was apparent she heard louder voices better, she rarely wears her spectacles.—*Cleveland Plain Dealer*.

Fondling Vies With Curley for Hospital Honors.—*Boston Globe*.

Our Mayor needs your cooperation. This is an emergency. Use the bus. Save your clutch and rear end.—*New Bedford Standard-Times*.

WEATHER: Warm today, wild tonight.—*Savannah Morning News*.

For your

REFRIGERATION, AIR CONDITIONING  
and HEATING UNIT NEEDS ...



Specify Quality-Controlled  
**PHELPS DODGE COPPER TUBE!**

- All tempers and sizes for use in original equipment.
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SALES OFFICES: Atlanta, Birmingham, Ala., Cambridge, Mass., Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.

## Sell Comfort Package (Heating, Cooling, Insulation) To Multiply Sales and Profits, Contractor Advises

PITTSBURGH—Sell builders and homeowners the whole "comfort package"—both insulation and heating and summer-winter air conditioning—and you'll multiply sales and profits.

Deliver greater over-all comfort at lower installation and operating costs and you'll multiply customer satisfaction and customer volume.

This point was brought home to an audience of heating and air conditioning contractors and insulation contractors here by a contractor operating successfully in both fields.

The speaker was John Hewitt, president of Todd-Roberts Co., Inc., Wichita, Kan., a company which claims to do "20% of all

the heating and air conditioning installation for builders in our area—no competitor does more—and about 80% of the insulation business in new homes."

The occasion was the first of a series of Greater Comfort Conferences to be sponsored by the National Mineral Wool Association, with the cooperation of the National Warm Air Heating & Air Conditioning Association. Some 75 contractors, manufacturers' representatives, and utility officials attended the meeting in the Hotel Penn-Sheraton. Announcement of others to be held in other key cities will be made later.

Presiding was William Boehmer, president of the Pittsburgh

Heating & Air Conditioning Contractors Association.

Todd-Roberts actually is two companies. Todd-Roberts Heating & Air Conditioning was founded in 1948; Todd-Roberts Insulation, in 1953. But the two operations work in close harmony, according to Hewitt.

"Being in both businesses helps both businesses," he said. "I don't mean that you air conditioning men should run out and get into the insulation business, or vice versa. But from our experience it might be real good business on your part at least to have a working agreement in the other field."

Hewitt said that he refuses to bid on a heating or cooling job unless the house is completely

insulated, "and we have a great many more satisfied customers for having taken that attitude."

The bulk of Todd-Roberts' business is with builders. Hewitt cited one recent case of a builder who wanted minimum insulation—an inch and a half in the walls and four inches in the ceiling.

The Todd-Roberts salesman gave him an estimate but also figured heating and air conditioning for the builder. The salesman then showed him the over-all net savings he could get with the right combination of insulation and equipment.

"By increasing the sidewall insulation to three inches and the ceiling insulation to six inches, and shading a few west-exposed windows, at an increased cost to the builder of \$100, we were able to reduce the air conditioner from a 4-hp. air-cooled to a 3-hp. unit."

"Reducing the size of the air

conditioner enabled us to reduce the size of the furnace because we did not have to have such a big fan capacity," Hewitt asserted.

"We figured a gross saving in equipment of \$300, and subtracting the \$100 for extra insulation, a net to the builder of \$200, with the savings for the family who would move into that house for as long as they live there. The net result was that we got a new customer for both our businesses," he pointed out.

Todd-Roberts has an extensive sales program with builders. The company underwrites a course on salesmanship for builders' salesmen, provides a "professional shoppers" service to check on whether salesmen are telling prospects about all the attractive features of their houses, (the "shoppers" are wives of Todd-Roberts personnel), buys ads in the Wichita papers for builders who subcontract to Todd-Roberts, conduct sales meetings with builders and their salesmen.

At these meetings, Todd-Roberts outlines forceful selling techniques, including a "pitch" based on Todd-Roberts' "comfort package." Hewitt described it thus:

"We have an idea that I am sure will appeal to you (the builder or salesman). Do you know that if you increased the thickness of the insulation of the sidewalls of this house from 1½ in. to 3, and the ceiling insulation from 4 to 6 in., that it would add approximately \$1 per month to the payments that the eventual buyer of the house would have to make?"

"Now included in that \$1 per month is approximately a 100% markup to the builder. But do you know if you make this increase in insulation at a cost of \$1 a month that the buyer's bills will be from \$4 to \$5 per month less as long as he lives in the house?"

Hewitt said he then shows the builder-salesmen sketches of a fully insulated house and samples of insulation batts and asks them:

"Now, Mr. Builder, what part of this program do you like best? The fact that you are going to sell more houses or the fact that you are going to make more money on each house that you sell?"

Hewitt said that this approach in the last six months "has added three 100-house builders with whom Todd-Roberts had never done business before."

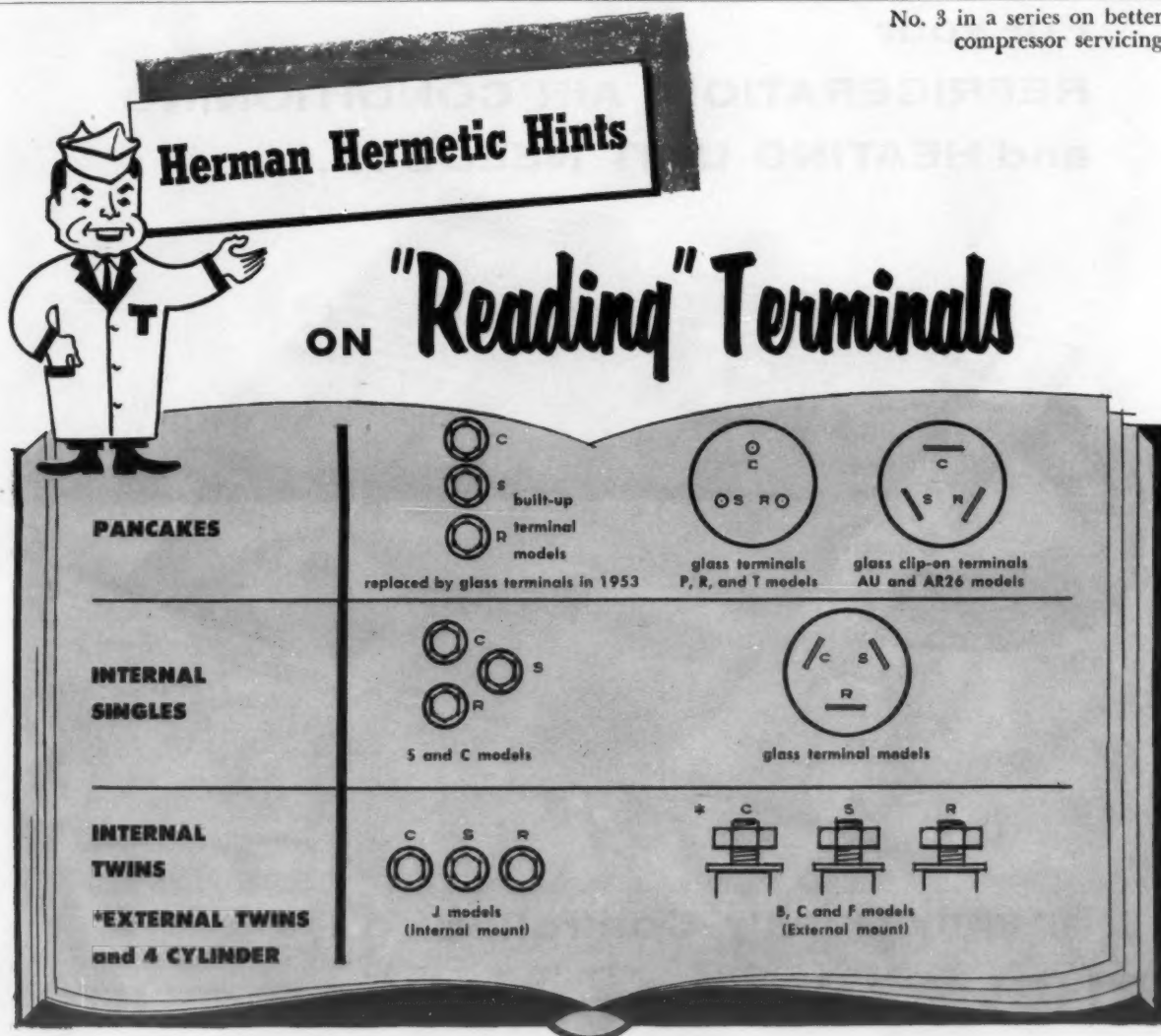
## Heil-Quaker Appoints Richard M. Herbert To Engineering Post

NASHVILLE, Tenn. — Appointment of Richard M. Herbert as chief engineer-air conditioning, has been announced by Roy L. King, director of engineering for Heil-Quaker Corp. here.

Herbert will be responsible for the design of residential air conditioning equipment manufactured by Heil-Quaker.

He was most recently associated with Borg-Warner Corp. as chief engineer of the Primor Products Div. and as staff engineer with the York Div.

No. 3 in a series on better compressor servicing



## know your terminals — it can save you costly wiring errors!

Avoid the possibility of costly and embarrassing motor burn-out by memorizing the location of terminals on any type of Tecumseh compressor. The diagrams shown represent each of the seven terminal types used. The letters C, S, and R refer to Tecumseh terminal order nomenclature; COMMON, START, and RUN. This wiring order never varies!

By "reading" terminals we are referring to a simple method of guaranteeing this correct wiring order. If you "read" from left to right in parallel lines, as you would read a book, terminals on every

Tecumseh compressor model will assume their proper order.

Horizontal lines can be ruled through the above terminals to illustrate this foolproof formula for you. Reading as a book — line for line, left to right, top to bottom — always maintain this correct order; COMMON, START, RUN. The only exception to this system is the now obsolete "H" model compressors. Terminal order on "H" models reads horizontally from left to right — Run, Start, Common. While we believe that this formula should guarantee correct wiring order, consult your authorized Tecumseh wholesaler in case of doubt.



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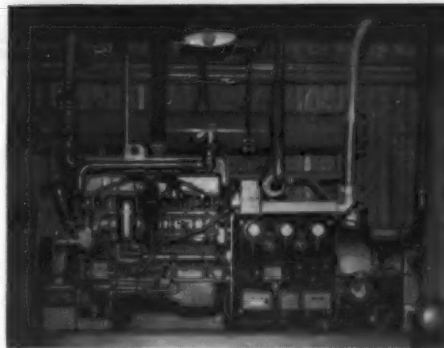




AIR HANDLING unit for the air conditioning system in United Gas Corp.'s Houston meter shop is suspended from the ceiling to conserve working space.



HOODS for the soldering furnaces, located on the right side of each work bench, are connected to a ventilating system designed to remove heat and obnoxious odors, reducing the load on the air conditioning system.



AIR CONDITIONING unit itself consists of a gas-fired internal combustion engine at left coupled to a compressor at right. Above and behind them is the condenser system. The unit has a capacity of 36 tons.

## Meter Shop Cooling Cuts Waiting Periods

HOUSTON, Texas — At the United Gas Corp.'s Houston meter shop, a recently installed gas-fired air conditioning system is expected to increase efficiency by making employees more comfortable, as well as to provide more effective temperature and humidity control.

A 36-ton Ready Power remote unit, using a gas-driven internal combustion engine to operate the compressor, was selected as the core of the air conditioning system.

Located just outside the meter shop, it is housed in a small structure with corrugated asbestos walls, matching the adjacent water tower.

Inside the shop, the air handling unit is suspended from the ceiling in order to conserve floor space. For economy, the ducts are suspended from the ceiling in the cooled area, and therefore require no insulation.

The shop itself is insulated with 4 in. of glass wool over a ceiling of accoustical paneling.

To reduce the capacity of air conditioning required, a ventilating system was installed to exhaust the heat and obnoxious odors from the 11 soldering furnaces.

The three men in the Houston division of United Gas who are responsible for efficient operation of the meter shop have expressed their extreme satisfaction with the installation.

They are C. C. McEachern, division superintendent; R. Frank Nowlin, engineer of operations; and W. P. LeBlanc, supervisor in charge of the meter shop.

"Before the shop was air conditioned," LeBlanc said, "it was ventilated by several large exhaust fans. While they provided some measure of comfort by moving the air, they did not actually cool the shop. As a result, the temperature during warm summer afternoons often reached the 90's.

"The installation of the air conditioning equipment now provides a uniform temperature of 75° around the clock."

In addition to providing comfort, the uniformity of temperature and humidity is most desirable in certain of the meter shop operations.

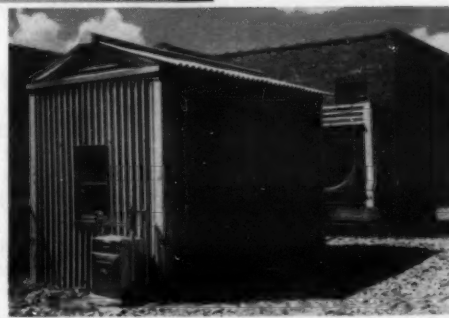
For instance, in proving meters after they have been renovated or repaired, it is necessary that the temperature of the meter bodies be the same as that in the proving room.

"Now that the meter shop and the adjoining proving room are uniformly air condi-

tioned, we have eliminated long waiting periods while the temperature of the meter bodies reaches room temperature," LeBlanc explained.

Because all the air is filtered, housekeeping has been reduced, while the odors characteristic of an industrial neighborhood have been eliminated.

GAS-DRIVEN air conditioning unit is housed in building in the foreground, which matches the forced draft cooling tower in the rear. Corrugated asbestos material is used for both.



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# The Independent Serviceman

Can Prosper In Face of Low-Priced Competition  
By Maintaining Flexibility, Watching Costs

By Frank J. Versagi

PORT HURON, Mich.—“The small independent serviceman can be successful in spite of erratic sales, ups and downs in service calls, and low-priced competition—if he maintains flexibility and vigorously watches his costs.

“He should have enough sense, too, not to pay himself a \$15,000 salary and still expect to maintain necessary growth capital.”

These are the strong opinions of Ken Campbell, owner of Campbell Refrigeration Sales & Service here.

Campbell has seen his equipment sales fall from as high as 60% of his total business to as low as 15%. Rolling with the times, he has had as many as five workers and has worked alone.

Through all of this he has continued to operate profitably and grow each of the 10 years he has been in business for himself.

In a city of some 40,000 like Port Huron, there are no giant

jobs, but a goodly number of smaller and medium sized ones. In fact, there is enough business to maintain seven refrigeration service organizations.

Among his accounts Campbell lists Kroger, A&P, and National Food stores, as well as many smaller, independently-owned grocery stores and markets.

Speaking of grocery stores in particular, Campbell points out that the failure of so many independent grocers and the simultaneous growth of supermarket chains accounts for the drop in his equipment sales.

“The small owner used to buy his equipment from independ-

ents like me,” Ken stated, “but the chains buy their larger equipment from manufacturers.

“Every once in a while a chain gets the idea that they would be better off with their own, chain-employed servicemen, and they try it for a few months. In every case, so far, they have found it more economical and convenient to return the service work to me.”

## Makes Periodic Tours Of Inspection

Campbell has very few actual service contracts as such. Instead, he makes periodic tours of inspection—monthly or bi-monthly—does what needs doing and bills the customer. His reputation is such that he encounters no difficulty with this method of operation. He is on call, of course, for any emergency work.

Working out of his house,

Campbell has one building for an active workshop and a second building for storage of old parts. His wife, an accomplished artist, does his book-keeping, and each is paid a nominal salary. The company phone is separate from an unlisted home phone which allows freedom for personal calls without blocking out possible emergency service calls.

“Although I’ll go out on an emergency call at any time, I try very hard to keep Sunday night as family night,” he explains. “Actually, it’s not too difficult because my periodic inspections keep most of the major units in operation. And, in a town of this size, people know each other well enough, so that my customers are considerate and don’t insist that I come right out unless there is a real emergency like an inoperative frozen food locker.”

The call load is very erratic. There are days when there is 18 hours work and days when only a couple calls come in. Campbell tries to schedule installation of new units for the slow times, but service calls usually claim priority.

The day the NEWS spent with Campbell was a busy one. It began with a call on a druggist who was enlarging and remodeling his store. Campbell had installed a 3-ton air conditioner and was being asked to suggest its relocation in the remodeled store. He spent almost an hour with the druggist pushing around the little scale models of the air conditioner, sinks, refrigerators, and work counters which had to be considered.

During the discussion, the druggist mentioned that they were going to have to install hot water radiators in the new part of the store for heating. He was elated when Campbell recommended the much easier installation of a heating coil to be used with the air circulation system of the air conditioner.

## Borrowed Tank of Methyl

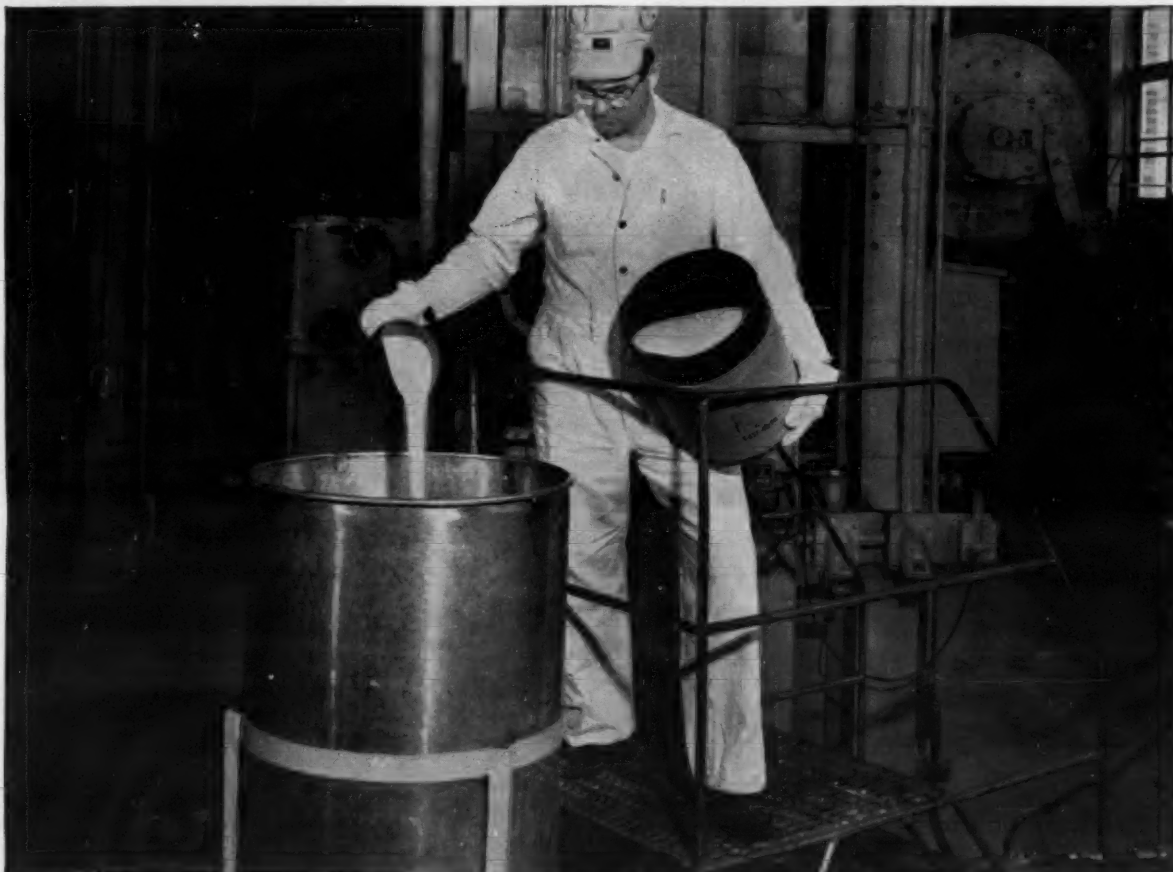
Next call was to be a farm where a milk cooler had become inoperative. Suspecting that the unit might be charged with methyl chloride, and being low on this item, Campbell stopped by a supply store, but they were also out of methyl.

Luckily another serviceman stopped in at the same time. He loaned us his tank of methyl, and there was a bit of friendly teasing about “Don’t put water in my tank before you give it back.”

On the farm we found that the cooler had started “acting up” the week previous by not running. In an attempt to make it run, the farmer had removed the cover from the control and turned every screw in sight. Actually Ken had never serviced this unit before, but was called because he had recently sold the farmer a 24-ft. freezer.

There was a label on the unit warning that alcohol had been added, and a stamp which said the unit was charged with Refrigerant-12. Just as a precaution, Campbell smelled the gas after checking the suction pressure and found it to be methyl chloride! A wise precaution.

He charged a little methyl into the unit, listening to the automatic expansion valve to tell when he had enough, check-



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ed the head pressure, found it excessive, and purged a little. Actually the unit was operative without this service and Campbell explained to the farmer that the reason the unit had acted up the preceding week was that the temperature had dropped to about zero. Thus, the temperature in the little wooden milk shed was lower than that being called for by the control. Campbell reset the control for 36° cut-in and a 29° cut-out, then checked to make sure the coil was frosting up.

#### Emergency Call From Supermarket

Back in town, we checked with Mrs. Campbell and found that an emergency call had come in from a supermarket; one of their reach-ins was not operating.

This particular supermarket had remote installations of all the compressors on two balconies at the rear of the store. Each balcony contained about a dozen compressors, most of them about 5 hp. Almost all were water cooled with a cooling tower on the roof supplying water for both balconies.

The particular 5-hp. unit had stopped. Campbell checked the incoming electrical power. OK. He removed the sight glass cover, and manually started the compressor. It ran all right; no activity at all showed in the sight glass. He checked the suction pressure—found it to be zero. Diagnosis: no charge.

As soon as he began charging the Refrigerant-12, a leak showed on the U-bend of the discharge line. This same difficulty had occurred on the discharge line of another identical unit. In that case, he had silver soldered elbows in place of the U-bend, but had found it to make an unsightly job, due chiefly to the fact that the tube was out of round from the original bending operation.

In this case he closed off the discharge valve on the compressor, closed off the receiver valve, and relieved the pressure in the line. Then he silver soldered the hole and recharged the unit with about 36 lbs. of refrigerant. At a convenient time, Campbell intends to replace the entire discharge line.

At that time he will also attempt to convince the store management to place vibration dampers on the discharge line of all of that particular model unit, since the U-bends all seem to have scoring marks from the original bending operations.

#### Unit Was Set To Defrost Only Once Each 24 Hours

At a second store in the same chain, one reach-in was found a little warm, although the compressor was operating. Checking the defrost timing mechanism, Campbell found that for some reason, the unit was set for one defrost every 24 hours, instead of one every 12 hours as is required for good service. He corrected the settings.

This was a day for frozen food troubles, for the next call was also a reach-in. This time it was a small, independent store. Four compressors of three different manufacturers were located in a dirty, out of the way room just large enough to hold the compressors and a couple people.

This was an open-type 1-hp. compressor about 11 years old. The owner had shut it off because it was knocking badly. In attempting to start it, the motor pulled hard, obviously overloaded. Campbell's preliminary diagnosis was a bent or broken crankshaft or connecting rod. The owner complained that the unit had been all right until Campbell added oil to it some three weeks previous.

Campbell reminded the owner that he had been called in at that time because the unit was noisy and had found it low in oil. At the time, he had pointed out that parts must have worn and might cause later trouble enough though the oil addition temporarily quieted the compressor.

He disconnected the defective compressor, went back to the shop and picked up an identical model used for standby work, and got the unit operating again. The owner wants Camp-

bell to dismantle the defective compressor and show him it is too badly worn to repair economically. Only then will he consider buying a new, hermetic unit to do the job.

The owner is impressed by the fact that one of his four units is 18 years old, and has never been out of service once. "Why aren't all the units like that?" he asks.

#### His Wife Keeps Records

During the time that we were making these and other calls, Campbell discussed his business methods. His wife is an excellent bookkeeper, and accurate records are kept of all income and outgo. At the end of every month, they know if they have made money or not—and what is more important—they know why.

In discussing price, Campbell points out that he does not feel underpricing is a healthy way to do business. When it becomes

apparent that a potential customer is primarily concerned with cost, Campbell tells him:

"I realize that in spending this money on repair you are spending money you hadn't counted on using. However, I want to do the job so that it won't need redoing in a couple weeks or a couple months."

"To do this I will charge a little more than some others who might be satisfied with what I consider mediocre work. Please feel free to call some other serviceman if you feel that the price is the most important consideration."

And Campbell is quality conscious, very obviously in love with his work, and actively interested in current developments. As far as the NEWS was able to determine, Campbell is the only serviceman in Port Huron who is active in the R.S.E.S. He is an avid reader of the trade publications and was able to discuss many arti-

cles which had appeared in the NEWS in the past year.

In contrast, one serviceman in the area stated, "You'll find those of us who are really busy don't have time to read magazines and papers."

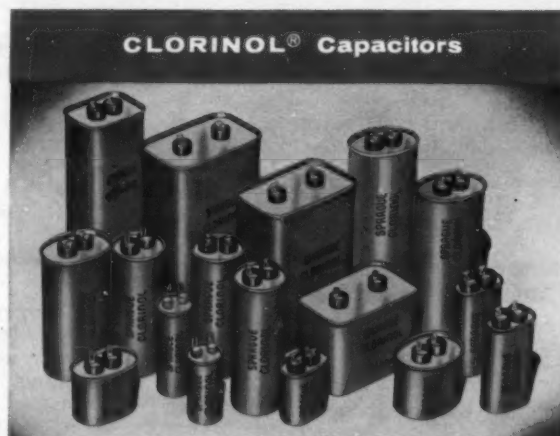
Campbell's answer to this is "Even in reading something about which I know almost everything, I can't help but get another man's viewpoint on the subject. More important, it is very infrequent that I don't come away with something new from an issue of a trade paper."

That this interest in his work and alertness have paid off is obvious when one looks at Campbell's modern home, complete service shop, and—most important—when one looks at Ken Campbell's reputation in the city he serves.

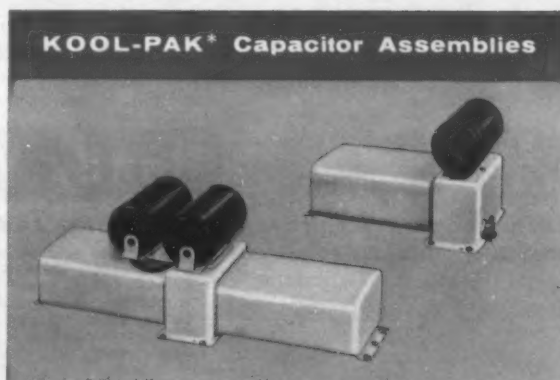
"There is still plenty of room in the industry for the small independent serviceman, who is willing to do quality service and charge for it," he insists.

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### LAST YEAR MR. NUSSBAUM HAD VACATION PROBLEMS THIS YEAR HE'S STAYING HOME IN COOL COMFORT

Trenton 8, N. J.

Editor:

Your July 14 editorial sounds almost like you went along with me and my family of five on a four-week trip to the West Coast last summer. Everything checks, including the sky-high prices, no room at the motel, crying children, harassed mother, and father angry at drivers and roads. And finally the return to the home, sweet home (with central air conditioning) and the resolution not to do it again.

One thing though, you forgot to include, which I think would fit right in with your story. That is the "hang-on" air conditioner in our station wagon. It works fine when the weather is cool; otherwise it makes a horrible racket and when the sun shines, it is totally ineffective. And finally, in the middle of the Mojave Desert it conks out altogether and Mom gets so mad she is ready to get out

and walk the rest of the way, without any clothing on herself.

Arriving in Los Angeles, one calls the "authorized service station" of the air conditioner manufacturer and one finds there is a phone which does not want to answer for three days in a row. Finally, in despair, the warranty sheet is torn up into pieces and an independent service station fixes the trouble—a leak at the condenser inlet—which requires complete disassembling of the entire engine compartment, horns, etc.; which costs not only an entire precious vacation day, but also enough money to pay for a week's stay in Miami Beach in an air conditioned hotel.

Anyhow, this family of five, as you wisely have guessed, spends the entire summer of 1958 in an air conditioned home; and is sorry your editorial did not appear a year earlier.

OTTO J. NUSSBAUM,  
Engineer

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## Shortage of Engineers? Not In Our Industry

CONTRARY to what one hears in general conversations, there is no real shortage of engineers on the staffs of manufacturers and contracting firms in our industry.

This is one of the surprising discoveries made by Frank Versagi while preparing his REPORT ON EDUCATION—a significant series of articles which will begin in the next issue of the NEWS.

Repeatedly, chief engineers and personnel managers—when asked specifically by Frank about their own staffs—admitted that "what we'd like is one or two exceptional men, but we have no actual shortage."

School officials affirmed that, while almost all engineering graduates can find jobs, companies aren't fighting for them, and they have to use a little leg work to get placed.

Frequently, it was learned, large engineering firms and some manufacturers actually fire engineers wholesale when some major project is finished or discontinued. One large consulting firm in the Midwest, for example, dropped more than 100 of its 400-odd engineers midway in the recession.

**There's this hoarding bit**, on the other hand. Some affluent firms hire more engineers than they need, then waste their talents on drafting or screwdriver jobs.

Then why all the hullabaloo about a shortage?

Mass emotion is one reason. You know the type of thing: we hear that the Russians are turning out 70,000 engineers a year; we are only producing 30,000. "WE'VE GOT TO CLOSE THE GAP!" the Drew Pearsons shout.

Nonsense. It's the Russians who need to catch up with us, in terms of total engineers now working, plus *quality* of engineers.

Once an idea originates, it is circulated by mass communication so rapidly and so repeatedly that it is accepted as gospel truth no matter how off-base. This is particularly true of *criticisms*. Americans have a passion for self-flagellation.

It is disconcerting to hear a panel of

speakers all decrying a lack of engineers (which they've heard about but haven't experienced themselves) and then find them unable to produce any supporting figures, or make tangible estimates of genuine needs.

**Typical example of this** occurred at a meeting of an industry society not too long ago. Five highly-placed men spoke with alarm about our industry's need for engineers.

Asked from the floor whether they were talking about a need for 500 or 5,000 additional engineers, right now or next year, not one had any idea! In fact, one educator admitted that he and his brethren may have been harping on a theoretical shortage.

After studying this situation, Mr. Versagi recommends:

(1) Manufacturers and contractors associations should pool statistics on the number of engineers they presently employ, in *specific categories* like design, application, service.

(2) Job-evaluate work being done by staff engineers. Much routine work may be found to be of sub-engineering level.

(3) After job evaluation, determine what segments of technical work can be performed adequately by technicians with two years formal training or less.

(4) Turn good engineers loose on real engineering problems. Pay them enough so they don't feel it necessary to enter sales or administration to move into adequate salary ranges.

(5) **Don't hire more engineers** than are needed. A good example: consulting firms or contractors require a lot of boardmen, but most need only one or two true engineers who are at home with calculus, advanced design, and original thinking. Technicians make equally good and far happier sub-engineers than do the true engineers who are capable of bigger things.

If each chief engineer and personnel manager who reads this editorial will follow these suggestions, any possible shortage of engineers in our industry ought to disappear. In fact, it is Mr. Versagi's opinion that said shortage is mythical even today.

Saints are so rare because almost none of us can repress a slight twinge of displeasure at hearing of a friend's sudden success.—SYDNEY J. HARRIS.



**Barnebey Tells ASHAE**

## How Activated Carbon Controls Odors, Reduces Cost of Cooling, Heating

MINNEAPOLIS — How activated charcoal is used to control odors and suggestions on its application were outlined at the 1958 semiannual meeting of the American Society of Heating & Air-Conditioning Engineers here by H. L. Barnebey, vice president of Barnebey-Cheney Co., producer of the product.

Not only can activated charcoal adsorb most toxic gases and irritating odors but its use can reduce heating and cooling loads by eliminating or minimizing the need for outside air for ventilation, explained Barnebey in citing a lengthy list of possible applications.

### How Activated Charcoal Is Produced

Activated charcoal is produced by burning out part of the carbon substance of coconut shells, leaving a sub-microscopic sponge structure of tiny capillary passages that adsorb gas molecules, he said.

"Certain other types of activated carbon, such as prepared from coal or wood, have much larger pores and do not have the power of removing the lower molecular weight materials from dilute concentrations," Barnebey asserted.

Odor-adsorbing capacity of the activated charcoal in common use ranges from a maximum of one-third pound of odor per pound of activated charcoal for many things such as gasoline, smog, and stuffiness to virtually zero for a few things like carbon dioxide and carbon monoxide, Barnebey disclosed.

Most difficult problem in applying any type of air purification method is determining the quantity and type of contaminants to be removed, he said, but after that has been determined, the amount of activated charcoal required can be arrived at easily.

### Method of Checking Air Contamination

He suggests using one, but preferably several, of the following methods of checking air contamination:

1. Knowledge or analytical determination of specific odor-causing compounds and their amounts.
2. Inventory of individual odor sources.
3. Type of occupancy and volume to be purified.
4. Dilution of purified air using the tables in the ASHAE Guide.
5. Purification test using a small adsorber.
6. Survey based on smell.
7. Rules of thumb and experience.

"For certain specific types of applications there may be rather accurate experience which dic-

tates the amount of activated charcoal to use and the best method of applying it," Barnebey declared.

"For example, in cold storage rooms for apples, it has been shown that 6 lbs. of activated coconut shell charcoal and 100 c.f.m. of recirculated air should be used during each storage period for each 1,000 bushels of apples."

Several arrangements of activated charcoal filter installations were also outlined by Barnebey, based on using either high efficiency adsorbers (which provide complete purification of air in each passage) or partial by-pass type units, or a combi-

nation of both.

With high odor concentrations at least, it is well to protect the activated charcoal adsorbers with dust filters; with some gases such as ammonia, scrubbing with water before or after the adsorbers may be desirable; for kitchen exhaust, grease filters should be used ahead of the charcoal; in heavy concentration of smoke, electrostatic precipitators should precede the carbon.

Activated charcoal filters, Barnebey also pointed out, are available in disposable types, factory-reactivated units, or installations that can be reactivated in place.

## WHAT . . WHEN . . WHERE

Oil-Heat Institute of America Directors Meeting  
Sept. 3-5, The Homestead, Hot Springs, Va.

National Institute of Locker & Freezer Provisioners  
Convention and Exhibit  
Sept. 21-24, Hotel Sherman, Chicago.

Refrigeration & Air Conditioning Contractors Association  
Convention  
Oct. 12-15, Broadmoor hotel, Colorado Springs, Colo.

Air-Conditioning & Refrigeration Wholesalers Meeting  
Oct. 22-24, Sheraton-Palace, San Francisco.

National Electrical Manufacturers Association Meeting  
Nov. 10-14, Traymore hotel, Atlantic City, N. J.

National Commercial Refrigerator Sales Association  
Convention  
Nov. 17-19, Golden Gate hotel, Miami Beach, Fla.

American Society of Refrigerating Engineers Meeting  
Dec. 1-3, Roosevelt hotel, New Orleans.

National Warm Air Heating & Air Conditioning Association  
Convention  
Dec. 1-4, Cleveland.

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in aluminum, brass, and copper tube*



Completely annealed fine grain structure of United seamless copper tube. Uniform and dependable.

Average quality grain structure of commercial copper tubing.

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1497 Elmwood Avenue, Providence 7, Rhode Island

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Only 25¢ each.



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## Through-the-Wall Unit Replaces Radiator

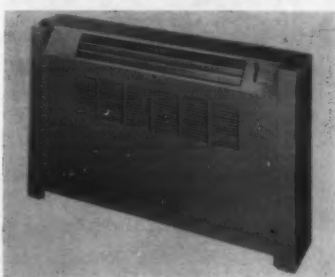
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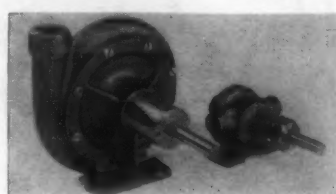
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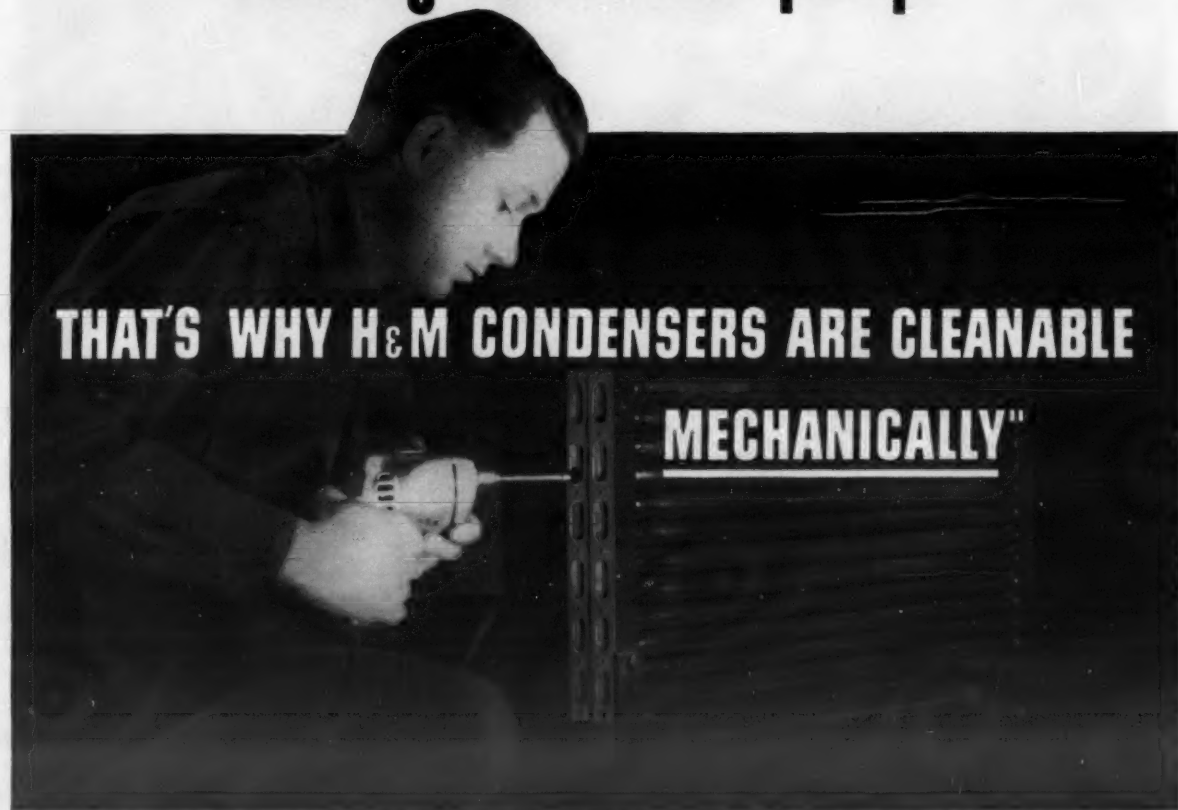


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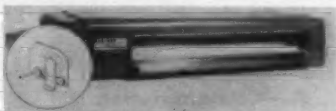
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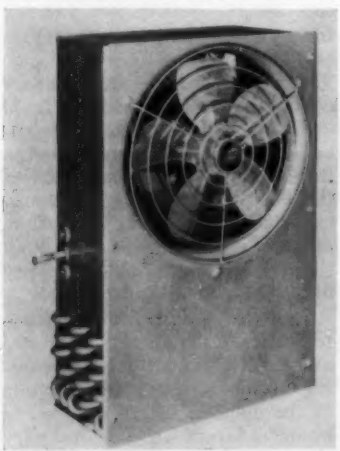
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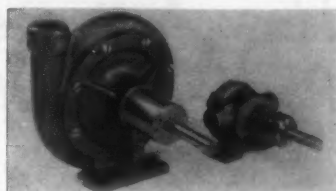
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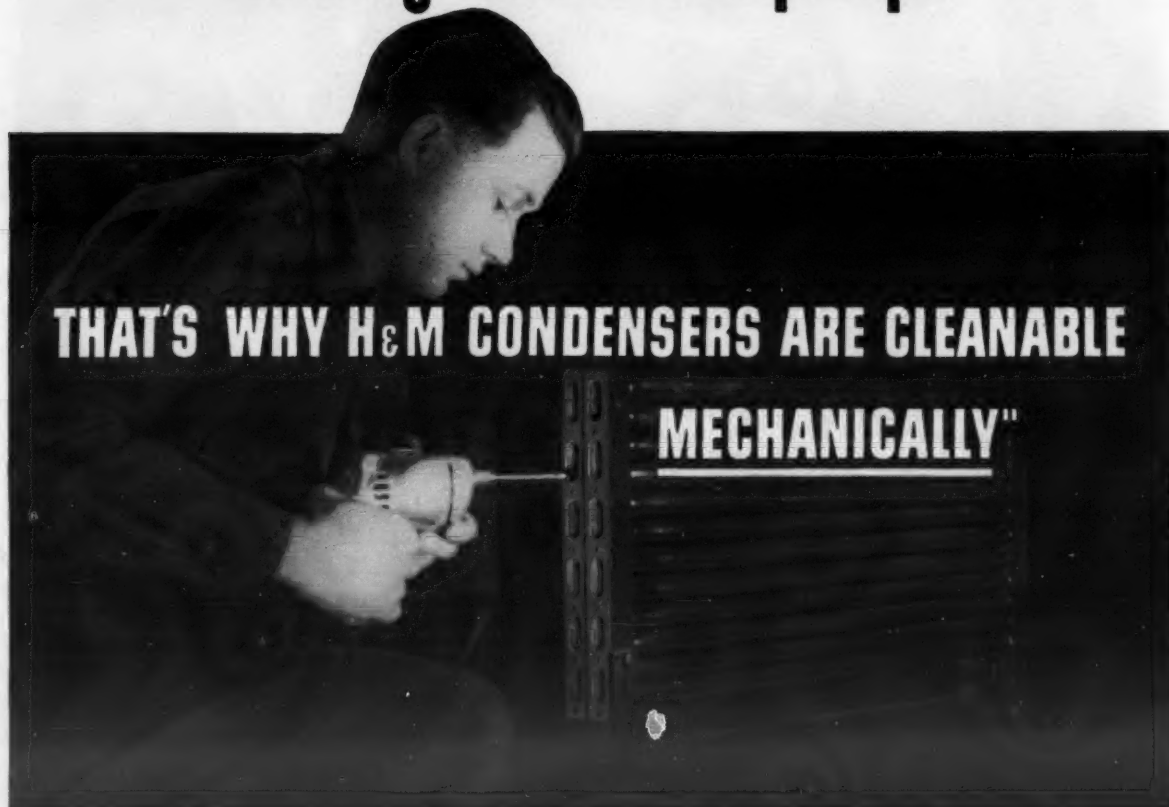


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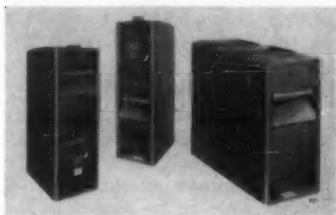
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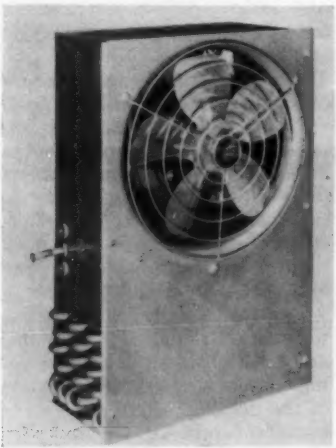
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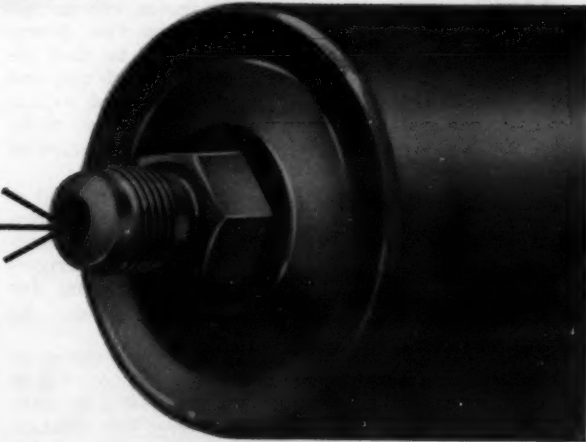
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EVERYTHING GOES IN ...



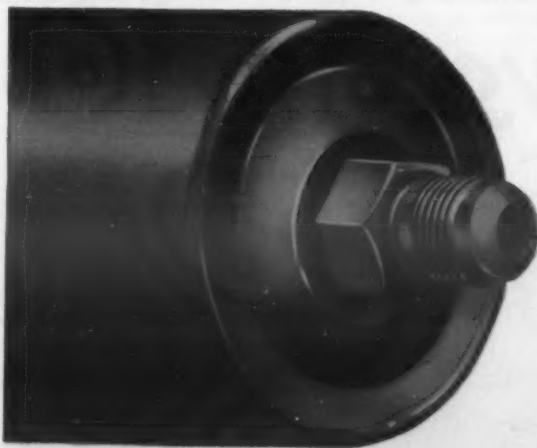
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## TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

### Location of Heat Pump Drier Is Problem

The increasing use of heat pumps has naturally raised all sorts of questions and problems—big ones and little ones. Converting a cooling unit into a heat pump is not merely a matter of adding a reversing valve to the system. Such items as a freezing water-cooled condenser, proper drainage of liquid refrigerant into the receiver, liquid slugging back to the compressor become critical problems on heat pumps.

At another time we may take a basic look at the heat pump. For now we will concern ourselves with a little, but nevertheless significant, matter—the function of the drier on a heat pump.

The question was posed by a small manufacturer of air conditioners who wonders what the effect is when refrigerant flow is reversed through so-called unidirectional driers. Most driers indicate an inlet end. Is direction of flow really significant, or merely nominally important?

Where does the drier fit on a heat pump cycle with two expansion valves? With one expansion valve?

How does the flow of refrigerant, in one direction or the other, in the receiver affect the proper location and function of the drier?

Right off, one or two engineers hold that the inlet and

outlet ends of most driers—while theoretically designed for flow control—are more usually designed to fulfill the mechanical requirements of holding the desiccant in place or some other such function.

Therefore, the actual effect on flow characteristics is insignificant, according to this line of reasoning.

However, even if this is true, there is the definite fact that trapped foreign matter will tend to be dislodged from filtering elements when flow through the drier is reversed. In a system containing any dirt to speak of this could be a problem.

Overwhelming opinion is to use driers in the position they were designed for.

In practice, this usually means using two driers on a heat pump. That is, if the drier is to be placed at the conventional location—just upstream from the expansion device, for a heat pump is usually equipped with two expansion valves, two check valves, and two driers. Flow is engineered so that refrigerant flows through only one drier, check valve, and expansion valve on any one cycle, according to J. E. Kumler, chief engineer of Ranco.

"Each check valve is piped in parallel with a drier and expansion valve. Thus, both in heating and cooling cycles, refrigerant flow is unidirectional for the drier that is in use," he explains.

John A. Schenk, director of engineering at Alco Valve, makes the point that it is possible to have several flow arrangements yet still maintain the same direction of refrigerant leaving the receiver.

In such a case, obviously, installing the drier in the liquid line before any tee or other change of direction to the expansion valves will allow the

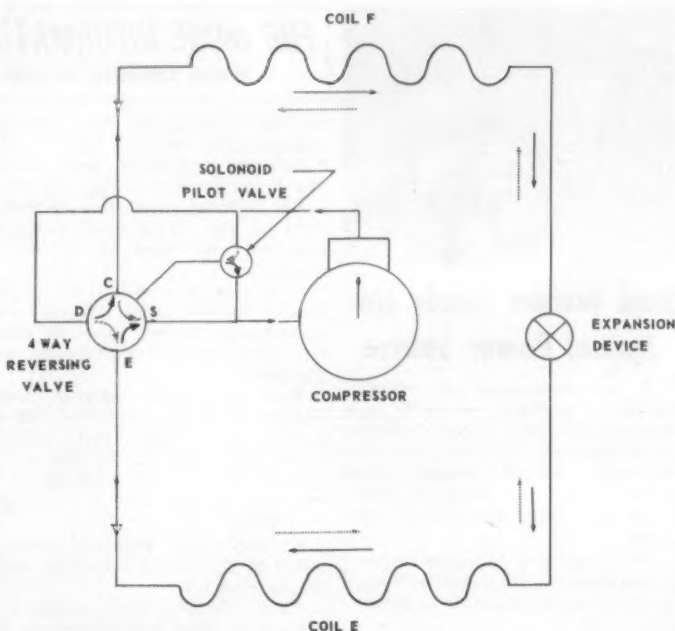


FIG. 1—Schematic of "stripped system" heat pump using only one expansion valve.

use of one drier on the system, although this removes it from its best location.

Schenk goes on to describe what he calls a "stripped system." As shown in Fig. 1, the system makes use of a 4-way reversing valve, but only one expansion device. The expansion device can be a cap tube or thermostatic expansion valve. In the latter case, Schenk states, the valve design must be such that it would permit its use with refrigerant flow in either direction.

### Temperature Sensing Device Protects Against Motor Burnout

TYLER, Texas—Positive protection against excessive motor winding temperatures is to be made possible with a new temperature sensing device which employs a thermostat buried in the end-turns of the winding, announces the General Electric Air Conditioning Dept.

Reduction in the number of burnouts and generally longer life for heat pumps and other air conditioning systems can be expected as a result of this new protective system, according to R. F. Hertel, manager of engineering at the G-E Air Conditioning Dept.

Announcement of the new

temperature sensing device followed four years of intensive research and development work, as well as close collaboration with G-E's Motor Dept. and Spencer Div., Metals & Controls Corp.

Since the thermostat is actually in contact with the motor windings, Hertel pointed out, the temperature is felt directly and sooner than by the more usual remote or semi-remote-type of overload control. Thermostats with several opening and closing levels are available, so the cut-out point can be varied according to the needs and engineering designs of dif-

ferent compressor manufacturers, he explained.

Such positive temperature control protects the motor from overheating and possible burnout. Hertel stated that burnouts have been a continuing problem for air conditioning systems, especially when their after-effects are considered—such things as contamination and damage to coils and controls.

General Electric has agreed to make its findings available and "will place all data concerning the new protective system at the disposal of all compressor manufacturers in the industry through General Electric hermetic motor departments."

Costs for the system have not been firmly established because no one knows the quantities that will be required, according to the company. Over-all cost is expected to be "roughly comparable to that of present control systems. Any slight extra cost for this system will be more than made up by the significant increase in compressor life."

Underwriters' Laboratories tests are presently being conducted on the new temperature sensing device, Hertel stated.

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the right man for a  
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Place your ad today!

## SAVE FIVE WAYS WITH FRICK EVAPORATIVE CONDENSERS

### ● WATER

Evaporative condensers take advantage of the heat absorbed in the evaporation of water—saving water and power to pump it.

### ● LABOR

Superior design and better materials (galvanized throughout) make Frick condensers more efficient and easier to maintain.

### ● TIME

Frick-Mollenberg controls are automatic—save time and keep condenser operating steadily in all kinds of weather.



### ● POWER

Ample cooling surfaces and conservative ratings enable Frick condensers to lower the condenser pressure and temperature and save power.

### ● MONEY

Reasonably priced and far more durable, they are economical to own and operate. A stock item, they are available for immediate shipment.

Frick Company manufactures a complete line of air conditioning and refrigerating equipment, designed for your individual requirements.

WRITE FOR YOUR FREE COPY OF THE NEW BULLETIN 234 TODAY

DEPENDABLE REFRIGERATION SINCE 1862  
**FRICK CO.**  
WAYNESBORO, PENNA., U.S.A.

### Dryomatic Names

#### P. L. Smith Vice Pres.

ALEXANDRIA, Va.—Election of P. L. Smith to the position of financial vice president and director of Dryomatic Corp. has been announced by Anthony Hass, president.

Commenting on Smith's election, Hass stated, "In his new position, Smith will have opportunity to investigate the possibility of mergers with other allied manufacturers and the acquisition of smaller firms to broaden the Dryomatic product line and markets."



## 'Perfect' Oil Heating Installation Involves Several Basic Factors, Institute Told

NEW YORK CITY — Basic factors for a perfect oil heating installation are proper firing rate, proper combustion chamber design and construction, proper baffling, good draft control, and good, even air patterns, according to Ralph L. Dennis, manager of the oil heating supplies division of Boston Machine Works Co.

These factors were outlined by Dennis at the 36th annual convention of Oil-Heat Institute here.

"After a boiler or furnace has been checked and made ready, the first step in the actual installation planning is to be able to properly figure the firing rate," Dennis said.

"Guessing about firing rates has led to much waste in fuel. If over-fired, the heater cannot absorb all of the heat and the excess passes off up the chimney. Soot conditions often exist. Excessive combustion noise often results. If under-fired, the burner runs excessively and recovery is slow.

"A proven formula for firing boilers properly is to divide the net steam rating of a boiler by:

"300 on boilers rated under 1,000 sq. ft. steam net;

"350 on boilers rated between 1,000 and 3,000 sq. ft. steam;

"400 on boilers rated over 3,000 sq. ft. steam net.

"If system is hot water, fire it just as though it were steam."

"A satisfactory rule of thumb formula for firing gravity type warm air furnaces is to fire 1 gal. per hour for every 2 sq. ft. of grate area. Most modern forced air furnaces have a prescribed firing rate given by the manufacturer.

"Stack temperatures are somewhat of a double check on whether or not units are being properly fired. They should not be less than 400° F. or over 600° F. when heater is clean and free from soot," Dennis explained.

"Combustion chamber construction is one of the arts of perfect oil heating. A fully qualified expert oil heating man must know how to select the proper material to use in his chambers. He must be familiar with all types of material from which combustion chambers are made and know why he chooses the material that in his opinion is best. He must know how to figure the proper area, height floor to nozzle, and the total height of his chamber. He must know when to corbel the back wall and what to do if his chamber covers up quite a bit of the water leg of the boiler.

"Genuine insulating brick of the proper type consistent with the firing rate of the respective job should be used in chamber construction because it glows red hot immediately.

"The area of the chamber is very important. On fires .75 to 3.0 g.p.h. figure 80 sq. in. per gallon; on fires 3.5 to 5.0 g.p.h. figure 90 sq. in. per gallon; on fires 5.5 g.p.h. and over figure 100 sq. in. per gallon.

"The height of a chamber is also important and generally is considered in two figures. The distance from the floor of the chamber to nozzle and the

height above the nozzle. The height floor to nozzle must be sufficient to avoid impingement on floor," Dennis pointed out.

"The height above nozzle must be enough to allow the flame to be held in suspension and not jump away from the end cone. It should also be high enough so that all combustion takes place in the chamber in the presence of red hot refractory.

"Why you baffle a boiler and how to do it right is another art that must be mastered," he continued. "The greatest benefit from baffling a boiler or furnace is obtained in the primary heat exchanger. A chrome steel baffle may be used on chambers up to 2 g.p.h. Best results will be obtained by locating the

baffle 10 in. above the top of chamber. Stack temperatures can be reduced from 75° to 250° by the proper use of a baffle. On larger jobs, baffling should be accomplished by corbelling the back wall of the chamber.

"No oil heating job can possibly be right without proper draft control. An oil heating man must know the two major reasons for controlling draft properly.

"Two major reasons for installing a well-designed and accurate draft stabilizer:

"1. To slow down to a desired rate the flow of hot combustion gases through the heater so that the heat can be absorbed into the heating system and not escape up the chimney. Chimney draft often varies

in average homes from .02 to .20 in. of water. In oil burner work, in ordinary home installations, draft requirements are generally from .02 to .04 in. of water.

"2. On burners using a fan of any type to supply primary combustion air a constant net draft is absolutely necessary. If the draft varies, so will the delivery of air from the fan. You will never be able to permanently adjust your air properly. Oil burner fans do not have a positive displacement and will deliver more or less air as the draft is stronger or weaker. Because of this, fires once left clean are frequently found smoking at a later date or it is found that CO<sub>2</sub> readings have dropped," Dennis commented.

"A knowledge of and respect for obtaining good even air patterns coming off the end cone of a burner is part of the

training of the well informed oil heating man.

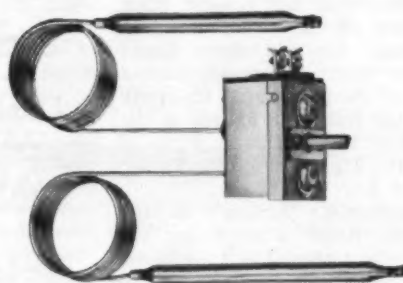
"Every model of gun type burner has its own particular air pattern. The fan air that blows down through the blower tube strikes against all of the mechanical pieces that are in the tube, the turbulator, the electrodes, the end cone, etc. Each has some influence on how the air comes off the end cone, which is the important consideration. If the air comes off in an even pattern, then a nozzle can be selected with the right angle and type of spray (solid or hollow) to match it.

"If the air pattern is uneven, it is impossible to obtain even fires.

"Remember the air pattern is the 'boss' of the combustion mixture. It is much more powerful than the oil spray. It must be even and true if good fires are to be obtained," Dennis cautioned.

# It's NOT the heat!

(IT'S THE HUMIDITY)



## Now a thermostat that reacts to both HUMIDITY TEMPERATURE

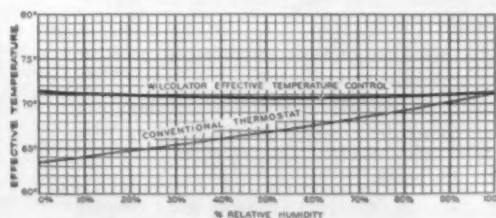
Here is a major improvement in thermostatic control of air conditioners—a new Wilcolator twin-bulb thermostat that senses changes in humidity, as well as in temperature, exactly like the human body. It can give your units the extra sales appeal needed to meet today's stiffer competition successfully.

Until now, most air conditioners have not been able to give complete comfort, because they respond to temperature changes only. For example, the usual unit may do a good job of keeping a room at 72°F., but on a hot, dry day this may feel too cool. Conversely, on a muggy day, it may not feel cool enough. This is why the new Wilcolator G2-E Effective Temperature Control is so revolutionary. It responds to both temperature and humidity changes and compensates by providing more cooling on humid days, less on dry days.

The G2-E control is equipped with both a wet and a dry bulb, which combine their signals so that the thermostat controls at any selected effective temperature. In application, the wet bulb is cooled by means of a wicklike sleeve which is kept moist by condensate from the evaporator. As

humidity increases, cooling by evaporation decreases, and temperature of the wet bulb rises. Hence an increase in humidity is sensed by the thermostat as an increase in temperature, just as it is by the human body. Consequently the G2-E corrects the controlled temperature to compensate for humidity change.

Write for more information on how you can profit from this newest development in air conditioning control.



Plot of typical control of effective temperature by new Wilcolator G2-E Control as compared to conventional thermostatic control of dry bulb temperature.

Thermostats for Every Heating and Cooling Application

THE **Wilcolator** COMPANY

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In Canada: Wilcolator (Canada) Ltd., 221 Evans Ave., Toronto 14, Ont.

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# Air Distribution Requirements In Year-Round Air Conditioning

## Part 2-Fundamentals of Air Handling

By Frank D. Klein, Chief Engineer, Governair Corp.

The ever-present requirement of "Outlet Velocity" is both an influencing reality and a point of conjecture. It seems to be a considerable point of controversy lately; more so than in the past, so it seems, as Outlet Velocities were not particularly keyed to system performance, so long as the system velocities were within the requirements. This was most always produced by sensible transitions and properly sized discharge plenums and ducts.

However, there appears to be in increasing numbers, requirements specifically referring to the Outlet Velocity of the fan

or blower; some engineers going so far as to specify it by outlet area. Even more than that to actually specify the diameter of the wheel they want.

Such detail can be both restraining on the part of the installer of the system, the manufacturer, and supplier of the self-contained equipment. Most important of all it tends to establish immediately a primary responsibility on the specifying engineer for the successful operation of the system.

Outlet Velocity of a fan as indicated by scroll outlet area should be in direct proportion to the system velocity at that

point downstream from the fan discharge, beyond the point of Inelastic Impact, and where Total Velocity Pressure is stabilized. Means of accomplishing the desired results at this point are immaterial as long as no other side and influencing effects are present to the detriment of the ultimate requirements.

If this be true it is incumbent on the system designer to select that fan equipment which will, within the system, produce those effects consistent with such ultimate requirements.

With the foregoing established, we leave air motivation and its effects and spend some time on system transmission. In effect, this is simply good practice in duct design.

There are many good standards of both design and fabrication for ductwork. An example of a consolidated and complete set is reproduced in Fig. 31. It has been used by many designers of the low-pressure type duct systems prevalent in the industry, and was developed by the former Servel, Inc. organization.

The sketches and the notes provide details on what constitutes good practice.

At this point it might be well as a "refresher" to return to the previous text and consult Figs. 14 and 15 on airflow in duct sections, for it's these losses which must be compensated for in duct design. Re-study also the following figures in the previous text: Table 5; Figs. 18 and 19; Fig. 25; Fig. 26; Tables 6 and 7.

Additional "Losses" in the system itself arise from (1) pressure losses due to elbows, (2) pressure losses due to changes in area, and (3) pressure losses due to divided fittings.

(To Be Continued)

## Atlanta Firm Opens

ATLANTA — Featuring a complete line of Fedders-Quigan Corp. equipment, Central Air Conditioning Service has opened for business at 4401 Roswell Rd., N.E.

Principals in the new firm are A. M. Russell, formerly service manager for Kenrow, Inc., and Ray Howell, formerly head of Tuxedo Television-Radio Service.

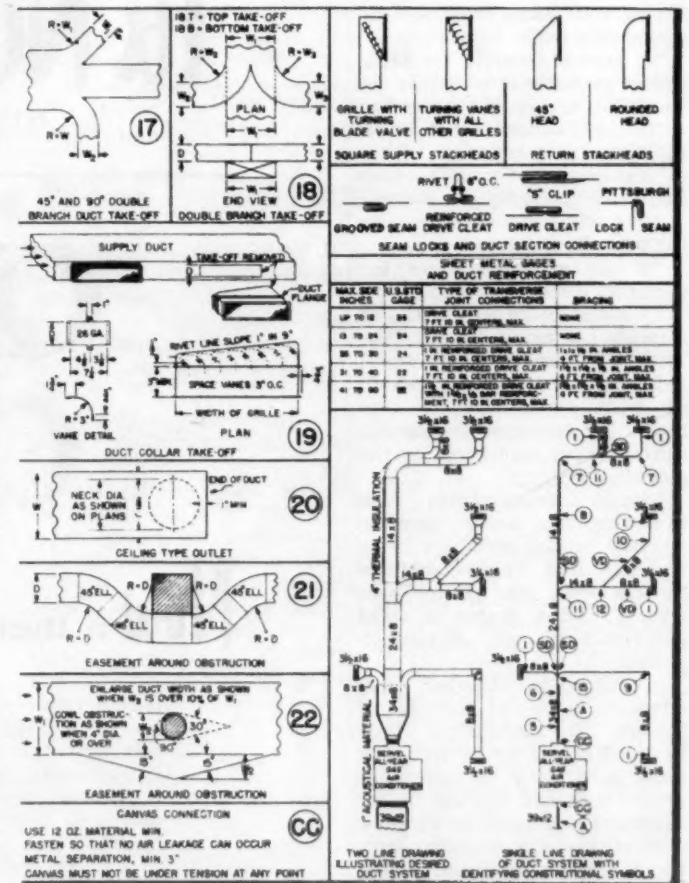
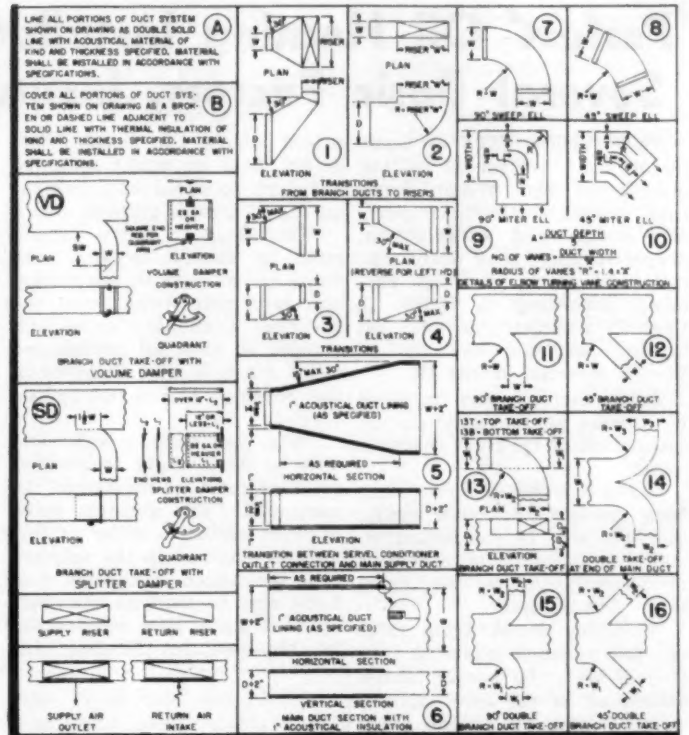
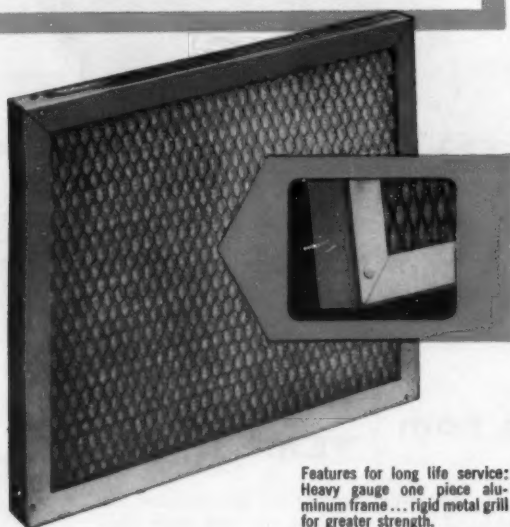


FIG. 31—Air distribution system constructional specifications sheet developed by the former Servel, Inc. organization. (For publication purposes the right half of the sheet has been cut off and placed below the left half.)

**You** make more profit  
per filter sale with  
**Skuttle-Aire**  
permanent filters!



Features for long life service:  
Heavy gauge one piece aluminum frame... rigid metal grill for greater strength.

**Here are the reasons why you get more with Skuttle-Aire:**

- because** they're permanent... built for lifetime wear.
- because** they're cleaned in a jiffy when dust and dirt particles gather, simply remove, clean with plain water and replace... that's all there is to it.
- because** they're maintenance-free... nothing to wear or replace, never need oiling.
- because** they're filled with new-type filtering material... multiple layers of specially woven plastic filaments with permanent electrostatic qualities, making it the ideal dust and dirt collecting agent.

SKUTTLE-AIRE permanent filters are available in all sizes for furnaces, central air conditioning systems and room coolers. Write today for complete information on Skuttle's quality products that give you more profitable sales.

**Skuttle**

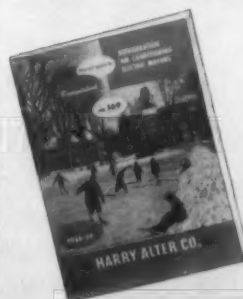
MANUFACTURING CO.  
MILFORD, MICHIGAN

IN CANADA: WAIT-SKUTTLE CO., OAKVILLE, ONT.



## YOU CAN'T HARDLY TOUCH OUR BARGAINS

That's because they're so very hot. Every month Harry Alter's buyers fill our famous Flyer with all kinds of special closeout bargains carefully picked from manufacturer's surplus. You can save 50% or more, from the regular wholesale price.



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REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

**SUPPLIES and PARTS**

SAVE MONEY, time and effort by ordering from our new Dependabook, the most complete catalog of all. 160 pages. Over 10,000 items carried in stock. Wholesale only. Your orders filled really fast by mail, or picked up at one of six big warehouses.

Write on your letterhead for the 1959 DEPENDABOOK... Also our monthly Flyer of surplus and close-out bargains.

**The HARRY ALTER CO., Inc.**

Chicago 16, Ill. New York 13, N. Y. Dallas 7, Tex. Atlanta 10, Ga.

FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES



# \$125 Million Exchange Park Will Have 13,000 Ton Air Conditioning System

DALLAS—The largest single air conditioning installation yet planned—it will eventually have a cooling capacity of 13,000 tons—is being made in Exchange Park, a fully integrated commercial development covering 120 acres here.

When completed, Exchange Park will be completely heated and cooled by natural gas—even to its sidewalks. This will require an annual gas consumption of approximately 1 billion cu. ft. to be furnished by the Lone Star Gas Co.

Located north of downtown Dallas and bounded by four major traffic arteries, the \$125 million development will eventually include four major office buildings, a department store, 150 retail shops, a 1,000-room luxury hotel, a 1,500-seat auditorium, and a medical center.

Already constructed are the 14-story home of the Exchange Bank & Trust Co., the Park's

utilities building, and the 10-story home of Braniff International Airways.

About half completed is a 32-alley bowling emporium belonging to Mickey Mantle, the Yankee slugger.

Substantial completion of the entire development is expected by 1960.

The utilities building now contains two gas-fired 50,000-lb. boilers and three 1,000-ton compressors. Bids have been taken and the order placed for a 2,500-ton compressor.

As the project load warrants, three other 2,500-ton compressors will be added to achieve the required 13,000 tons. A fifth 2,500-ton unit will be installed as standby equipment. At least two more boilers will also be required to provide the necessary steam.

## Steam Driven Compressors Being Utilized

The compressors are steam-driven units equipped with variable-pitch propeller-type compressor blades, which achieve better than 80% efficiency at loads as low as 30% of rated capacity.

Serious study is now being given by Exchange Park officials to a plan whereby the electricity used in the project would also be generated in the utilities building by gas equipment. Under this plan three gas turbines would drive three 5,000-kw. generators.

In the air conditioning system, "Freon" is the refrigerant used to chill water at the central location. This water is then piped to the various buildings through the utilities tunnels. At each building, centrifugal blowers propel air over chilled water coils and then on to mixing boxes throughout the building.

Steam at 235 lbs. of pressure p.s.i. and 400° F. drives the compressors and then is utilized at 5 lbs. p.s.i. for boiler water heating and hot water for domestic purposes.

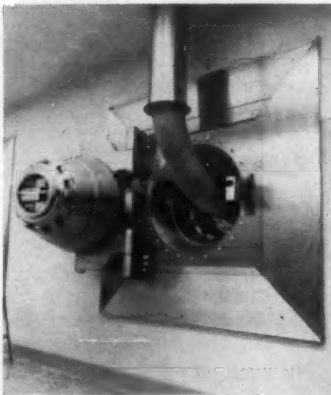
Steam is sent at boiler pressure to each building where pressure is reduced. Hot air is produced in a blower-coil similar to the chilled water arrangement and is sent to the same mixing boxes.

Thermostats in each zone control each mixing unit, which varies the proportions of cold air and hot air as required for the particular space. Individual zones vary in size from 80 to 200 sq. ft.

Fresh air is continuously introduced at both hot and cold air blowers. Return-air ducts deliver part of the return air to the main units, the remainder being exhausted into the equipment rooms.

## Supervisory Control Center Is 30 Ft. Long

A supervisory control center provides a visual representation at all times of the operating conditions through the utilities



SPECIAL door is provided for cooling of vault in Exchange Bank.

plant. This center is a 30-ft. long enameled steel panel on one wall on which every component of the plant is represented in miniature, including the piping systems in color-coded lines.

Jewel lights indicate equipment in actual operation, and fluid pressures and temperatures are recorded continuously.

In addition to the gas-fired boilers and the turbine compressors, the utilities building contains provision for nine cooling towers, two of which are already in operation, and adequate shops for project maintenance personnel.

Exchange Park has its own water well, which flows 250 g.p.m., to supply water for cooling tower makeup and for landscaping. It also can be called on for boiler feedwater.

When Exchange Park is completed, it will be possible to go from any part of one building to any part of another without ever leaving the comfort of the gas air conditioning.

Complete facilities for living, working, eating, shopping, recreation, banking, transportation, medical attention, and every other personal and business need will all be connected

## NOW increase profitable sales with a complete line of VILTER ammonia refrigeration equipment

Substantial sales are now possible in numerous areas for distributors prepared to offer a complete line of ammonia refrigeration equipment. With the versatile Vilter ammonia line, you can handle practically any commercial and industrial refrigeration application in your area on an attractive competitive basis.

The Vilter ammonia line consists of VMC compressors, 15-250 ton capacities, booster compressors, plus a wide range of associated refrigeration equipment—evaporative condensers, blast freezers, brine coolers, ice machines, shell and tube condensers, and cooling coils among others.

Vilter distributors enjoy many sales advantages:

- ★ Outstanding line of refrigeration equipment—known for its dependable service, long life, efficient, economical performance.
- ★ Equipment backed by ninety-one years of intense activity in engineering and research.
- ★ Strong home office support. Engineering application counsel is always available.
- ★ Wide acceptance of Vilter equipment in all industries using refrigeration.
- ★ The Vilter line is advertised widely in the trade press.

It will pay you to consider the Vilter line of ammonia refrigeration equipment for your area. High sales potential. Good profits. For distributors interested in the entire Vilter line there is a full Freon compressor line plus air conditioning equipment. Don't wait! Get acquainted now.

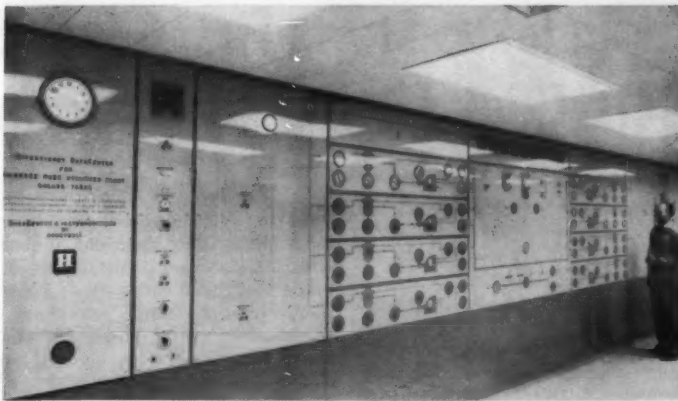


REFRIGERATION and AIR CONDITIONING

THE VILTER MANUFACTURING COMPANY • Milwaukee 7, Wis.

Ammonia & Freon Compressors • Packed & Polarflake Ice Makers • Ammonia Liquid Transfer Systems • Evaporative & Shell & Tube Condensers • Pipe Coils • Valves & Fittings

## Commercial Air Conditioning



All operations in utility building are shown on 30-ft. control panel.



THREE 1,000-ton refrigeration machines for air conditioning occupy only a small part of the room where 13,000 tons will eventually be in operation.

through a series of air conditioned malls.

These malls or pedestrian streets, 40 ft. in width, will extend over a mile in length. Overhead they will be covered by skylights and facing them will be the fronts of the retail shops.

Financing most of Exchange Park is William A. Blakley, a Dallas attorney who served last year as interim United States Senator and is currently campaigning for the same job.

The 14-story Exchange Bank building, already constructed, has 13 stories above ground and contains more than 250,000 sq. ft. The bank itself occupies most of the first floor. The huge vault in the bank, one of the largest in the Southwest with 1,600 sq. ft., is fully air conditioned.

Unique in Dallas, the building

is constructed so that no sun will reach its windows from March to November. North and south walls are made up of continuous windows with colorful, insulated spandrels. Projecting sun visors shade windows to cut down heat, thereby increasing efficiency of the gas air conditioning. The east and west walls are panels of cast stone.

The gas heating and air conditioning equipment was installed in the utilities building by Kiefer Plumbing & Heating Co. of Dallas.

Lane, Gamble & Associates are the architects, engineers, and site planners. J. E. Guerrero did the mechanical and electrical engineering for the bank and utilities building. William K. Hall & Associates was in charge of the mechanical and electrical engineering on the Braniff Bldg.



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## CONDENSER CLEANER

Simply dissolve ANCO Condenser Cleaner in the sump while the system is in operation. Within 2 to 15 hours, condenser tubes are cleaned, head pressure drops to normal, and operating efficiency is restored.

ANCO Condenser Cleaner will not damage metals and is not hazardous to handle. Try it once and you'll use it always.

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Protect condenser against rust, scale and pitting with ANCO Cooling Water Treatment



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# Kalamazoo Starts First Silver Shield Program; Sets Goal of 475 Systems for Coming Year

By C. Dale Mericle

KALAMAZOO, Mich. — Goal of 475 Silver Shield installations in the next 12 months is the aim of the Kalamazoo Indoor Comfort Bureau, it was disclosed by Lewis Andrus, president, at the banquet which recently kicked off the first Silver Shield program in the country.

The celebration dinner was attended by local dignitaries, bankers, builders, contractors, and a number of industry executives seeking first-hand information on how such a program can be conducted.

## Designed To Improve Quality (and Price)

The Silver Shield program—a promotional effort designed to improve the quality (and price) of residential heating and air conditioning systems—was developed by the National Warm Air Heating & Air Conditioning Association, which has granted a license to the Kalamazoo group.

(Local groups in several other cities have also applied for licenses for Silver Shield programs, but NWAHACA officials, it is understood, plan to move somewhat slowly while watching the "guinea pig" operation in Kalamazoo.)

A major requirement of Silver Shield systems is that they be installed in accordance with the manuals of the National Warm Air Association. Provision is made for three categories: summer, winter, and year-round ("winter-summer") air conditioning systems.

Plans for a proposed Silver Shield system must be submitted to the local comfort bureau for prior approval, and the completed installation must pass inspection before the Silver Shield decal is applied. The local bureau further guarantees that any shortcomings that may later develop in the system will be corrected.

## Costs Will Be Met From Charges for Silver Shields

Cost of this service as well as the extensive advertising and promotion campaigns seeking to sell the public on demanding the quality implied by Silver Shield systems, is expected to be met by the charges for each Silver Shield. It was indicated that the Kalamazoo group will probably establish \$10 as the fee for each shield.

Contractors do not have to belong to the Kalamazoo Indoor Comfort Bureau in order to in-

stall Silver Shield systems, it was emphasized, but such systems have to meet all the stated requirements and the non-member contractor has to pay the same price for the Shield decal as a member contractor.

First in the planned continuing schedule of full-page newspaper advertisements to promote Silver Shield systems appeared in the July 26 issue of the Kalamazoo Gazette, the day following the kick-off banquet.

Most of the copy in this ad was devoted to general discussion and explanation of what a Silver Shield system is supposed to be, but some specific performance requirements for heating systems were listed:

"Uniform temperatures throughout all rooms. Temperatures between all rooms can be maintained with 2° of thermostat setting of 75° F.

"Floor warmth in all above grade rooms. Temperatures 4 in. above floor surface will not be less than 70° F.

"Constant room air temperatures. Temperature fluctuation within any room will not vary more than 2° of the thermostat setting between the 'on' and 'off' cycling of the furnace unit.

"Uniform temperatures between floor and ceiling. Air temperatures measured 4 in. above the floor and 72 in. above the floor (living zone) can be maintained so that variations will not exceed 1° for each 15° difference between indoor and outdoor temperatures.

"Filtered air. Through the use of filters, air will be delivered to all rooms.

"Humidified air. Through the use of a humidifier, humidity can be added to all rooms."

Bottom section of the ad listed the 12 charter members of bureau:

Andrus Heating, C. Bartholomew, DeHaan Heating, Nelson

Now is the time to plan for comfort in your home next winter. Read this message carefully. It can mean years of pleasant indoor comfort enjoyment for you and your family.



## THIS SHIELD...YOUR GUARANTEE OF HEATING COMFORT

### KALAMAZOO INDOOR COMFORT BUREAU INTRODUCES GUARANTEED HEATING SYSTEM

It is now no longer necessary to "hope" that the new heating system you buy will be a good one. Now you can be sure in advance that the system you buy will deliver the kind of reliable comfort performance you want in your home... if you buy a SILVER SHIELD SYSTEM.

As a new service to the public, the Kalamazoo Indoor Comfort Bureau, comprising the member-contractors listed at the bottom of this page, announces the introduction of the SILVER SHIELD SYSTEM to the home owners and home buyers of Greater Kalamazoo. This is a SILVER SHIELD SYSTEM, designed and developed by the National Warm Air Heating and Air Conditioning Association. It is a new type of heating system, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home.

### Look For The SILVER SHIELD LABEL

A SILVER SHIELD SYSTEM is a new type of heating system, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home. It is a SILVER SHIELD SYSTEM, designed to give you the kind of indoor comfort performance you want in your home.

### FOR FURTHER FACTS ABOUT SILVER SHIELD SYSTEMS

ANDRUS HEATING 125 W. Main Phone 1-1000 Pratt Furnaces	GUERNSEY & JONES WARM AIR HEATING CO. 101 E. Main Kalamazoo Furnaces	S & N HEATING CO. 110 W. Main Victor Furnaces
C. BARTHOLOMEW 100 W. Main Phone 1-1000 Home Furnaces	KALAMAZOO MECHANICAL SERVICE CO. 110 S. Main Cylinder, Air Conditioning & Air Conditioning	SCHIPPERS 100 W. Main Wattage Heating & Air Conditioning
DE HAAN HEATING 101 W. Main Phone 1-1000 Home & Air Conditioning	WM. V. METZGER & SON 101 W. Main Furnace Heating & Air Conditioning	DONALD R. SNYDER 110 W. Main Jacketed Furnaces
NELSON FOX HEATING 101 W. Main Phone 1-1000 Central Heat Heat Furnaces	GLEN W. RYBRAND CO. 101 W. Main Delco Heating & Air Conditioning	L. E. TASSALL CO. 101 W. Main Boiler Furnaces

FIRST advertisement in the extensive and continuing advertising campaign scheduled by the Kalamazoo Indoor Comfort Bureau was this full page in a local daily paper.

Fox Heating, Guernsey & Jones Warm Air Heating Co., Kalamazoo Mechanical Service Co., Wm. V. Metzger & Son, Glen W. Rynbrand Co., S & N Heating Co., Schippers Service Appliance, Donald R. Snyder, and L. E. Tassall Co.

Present plans of the Kalamazoo group call for most promotional efforts to be concentrated in the local daily newspaper, but some radio and television advertising is being considered for the near future.

First public promotional event actually took place the

afternoon of the kick-off banquet—Friday, July 25—when "Miss Silver Shield" (the very attractive Dee Reavis) paraded through downtown Kalamazoo streets on a horse while holding a stainless steel shield on which was painted the provocative initials "S.S."

The horse was loaned to the bureau for this purpose by Clyde Whitcomb, president of Kalamazoo Furnace & Appliance Mfg. Co., who also provided a fabulous saddle heavily covered with sterling silver and reputedly worth around \$9,500.

At the banquet and press conference immediately preceding, it was disclosed that the sponsoring group of the Kalamazoo Indoor Comfort Bureau was the 45-year-old Kalamazoo Sheet Metal, Heating, and Air Conditioning Association.

Harold Guernsey, president of the latter group and vice president of the comfort bureau, explained that a group of Kalamazoo contractors had been meeting regularly for nearly two years in hopes of devising some way of getting the local heating industry out of its " doldrums."

"We had just about completed our plans when the Silver Shield program was announced by the National Warm Air Association, so we decided to adopt this," Guernsey said.

Actually, the Kalamazoo group was ready to go a few months before NWAHACA could get final clearance on the Silver Shield program (which was delayed primarily because of some legal questions), pointed out W. K. Ahlrich, secretary of the comfort bureau.

Fourth officer of the bureau is J. Van Dalsen, treasurer. Toastmaster of the kick-off

# NEW!

## KMP

### LITTLE GIANT MOLECULAR SIEVE ALL-PURPOSE DRIER

Made with 100% Molecular Sieve—No additives or binders to reduce drying capacity.

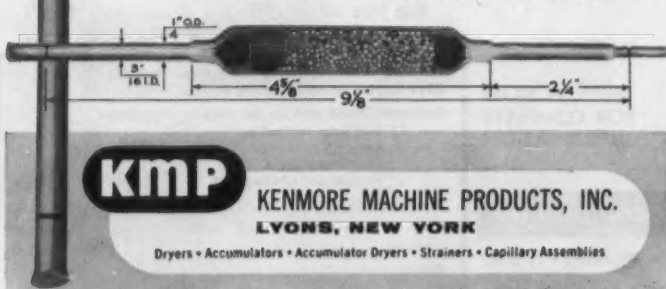
## The Smallest, Most Powerful, Easiest-to-Install Drier Made

Here is a general purpose drier designed, tested and proved to eliminate the worst moisture conditions encountered in general field service work. It is small, but with plenty of capacity to handle units up to ¾ hp, and the large capacity inlet filter will clean up the dirtiest system.

**CAPACITY:** The Little Giant Drier can be used on all hermetic and open-type units up to ¾ hp with F-12 and ½ hp with F-22 refrigerants.

**CONSTRUCTION:** The KMP Little Giant Drier consists of a ¾" O.D. spun copper shell with ¼" copper end tubes silver brazed in place. The inlet is made to fit either ¼" O.D. or ⅜" I.D. with outlet spun down to accommodate capillary. Driers are completely dehydrated and the ends fused and sealed to insure dryness. KMP's undercutting feature permits tubes to be quickly and easily snapped off, as well as cut off, swedged, flared or bent to take care of all field applications from capillary sweat connections to ¼" flare. Rated in accordance with AR1 Standard No. 710.

SEE THE KMP LINE AT YOUR WHOLESALE



## KMP

KENMORE MACHINE PRODUCTS, INC.  
LYONS, NEW YORK

Driers • Accumulators • Accumulator Driers • Strainers • Capillary Assemblies

## NEW AIR CONDITIONING CIRCUITS COMPLETELY CHARGED WITH F-22



... Water cooled air conditioner refrigeration circuits are hermetically sealed and completely charged with refrigerant. Compressor, cooling coil, condenser, control panel, and other accessories are mounted on a sturdy frame, and all wiring is complete between compressor, capacitors, pressure cutout, and control panel.

1. Complete hermetically sealed circuit.
2. Hermetically sealed Tecumseh compressor.
3. Direct expansion cooling coil.
4. Halstead-Mitchell copper water cooled condenser.
5. Hi-Lo pressure cut-out switch.
6. General Controls Master control Panel.
7. Water connection panel, water in, water out and condensate drain.
8. Single phase, 60 cycle, 230 volts.

Model No.	HP	Frame Size H. W. D.
M-1502	1 1/4	44 1/2 10 28 1/2
RH150W	1 1/4	43 10 28 1/2
RH200W	3	54 1/2 17 1/2 27 1/2
Shipping weight	1 1/4 HP	210#
	3	235#

PRICES F.O.B. WAREHOUSE LOS ANGELES:  
TERMS: Open if rated with D&B

Model M-1502	90.00	Available, 40 circuits
" RH150W	90.00	" 60 "
" RH200W	125.00	" 20 "

For additional information, phone, wire or write to:

ESKIMO PRODUCTS DISTRIBUTORS  
2146 Sunset Blvd., Los Angeles 26, Calif.  
Phone DUckirk 5-2239.





PUBLICITY "gimmick" devised by Kalamazoo Indoor Comfort Bureau to arouse interest in the nation's first Silver Shield program was to have pretty Miss Dee Reavis parade through downtown streets bearing a "silver" (really stainless steel) shield on a horse and saddle heavily decorated with silver (sterling yet) volunteered by Clyde Whitcomb, president, Kalamazoo Furnace & Appliance Mfg. Co.



## Silver Shield--

banquet was Homer Brundage, chairman of the board of the Brundage Co. and a NWAHACA director, who has been the chief liaison contact between the Kalamazoo group and the national association.

Speakers included Paul Morrison, vice mayor of Kalamazoo; George Boeddener, managing director of NWAHACA; Lewis Andrus, president of the comfort bureau; Clyde Whitcomb of Kalamazoo Furnace, and Harold Guernsey.

At the dinner Boeddener formally presented the "license" for the Silver Shield program to Andrus.

In his talk Andrus declared that "we are going to exert every effort to condition the minds of Kalamazoo home buyers and homeowners to the point that when they think about heating or air conditioning they will think about Silver Shield heating and air conditioning."

"We believe," he also commented, "that we are realistic in our opinion that this industry has relied too long on what

we would term 'going business'—business which results solely from 'forced' buying, buying by people who are forced to buy a heating system in order to equip a new house or replace an old burned-out furnace.

"These people do not actually want to buy a heating system. They are forced to buy one as a result of circumstances," Andrus said.

### Little If Any Selling Has Been Done

To date there has been little if any actual selling of heating systems, Andrus indicated.

Silver Shield systems will not only mean better comfort for the consumer, but increased income for the contractor. This is fundamentally the two-fold aim of the program, it was pointed out.

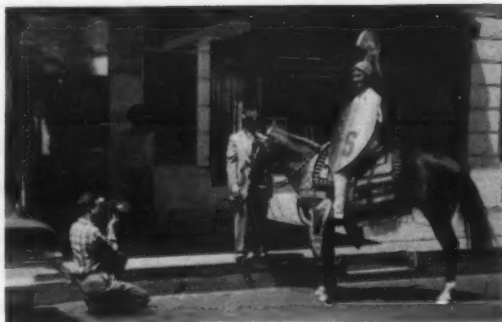
Each such system should cost from \$200 to \$800 more than the average installation, Andrus said. He further estimated that the goal of 475 Silver Shield installations in Kalamazoo in the next year would represent an additional cost of \$250,000 above that for the average system.

Bankers present pricked up their ears at this statement, for financing that additional cost could mean additional interest for them.

Probably the most down-to-earth and bluntest remarks at the banquet came from Clyde Whitcomb of Kalamazoo Furnace, who commented, "Why are

Trying to find  
the right man for a  
hard-to-fill vacancy—  
the NEWS' Classified  
Ads are read by your  
man.

Place your ad today!



GIMMICK proves successful, as witness the local television cameraman shooting movies for the night's news program.



SPEAKER scores a humorous point at the kick-off banquet. Left to right are Homer Brundage, head of the Brundage Co. and toastmaster; Lewis Andrus, president of the Kalamazoo Indoor Comfort Bureau; Clyde Whitcomb, president of Kalamazoo Furnace; Harold Guernsey, president of Kalamazoo Sheet Metal, Heating, and Air Conditioning Association, sponsoring organization behind the comfort bureau.

we here? This industry is in such a mess we have to get together."

Noting that most equipment being manufactured today is good equipment, Whitcomb declared that the problem apparently is in getting a good installation.

He offered a very encouraging note, however.

"Two bankers in the past 48 hours have told me that they pick up every bit of furnace 'paper' they can. That speaks well for our industry," Whitcomb suggested.

One of the problems in connection with programs such as the Silver Shield promotion is the fact that many interested contractors may not be fully aware of the standards of installation required or don't know exactly how to achieve them.

To solve this one, it was disclosed, the Kalamazoo Indoor Comfort Bureau plans to conduct a school for members and non-members alike.

## Edwards Airvec Supplies 10 Tons of Air Conditioning To New Florida Supermarket\*

EDWARDS Airvec Condenser Utilizes Convection Principle. Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and 7½ ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.



Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.



EDWARDS ENGINEERING CORP.  
103 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

\*Daylight Grocery Co., 1003 Florida Avenue, Jacksonville, Florida

## Now Representing...

Home Products Div., Rheem Mfg. Co.—Four plumbing and heating wholesalers have been appointed distributors of Rheem furnaces and "Rheemaire" central air conditioning. They are BOCANER SUPPLY CO., Wisconsin Rapids, Wis.; SHEET METAL PRODUCTS CO., Peoria, Ill.; STEWART SUPPLY CO., Greenville, S. C.; and HAGAN SUPPLY CORP., Norfolk, Va.

Trion, Inc.—JAMES R. MASON & CO., Charleston, W. Va., has been named a representative for commercial and industrial electronic air cleaning equipment.

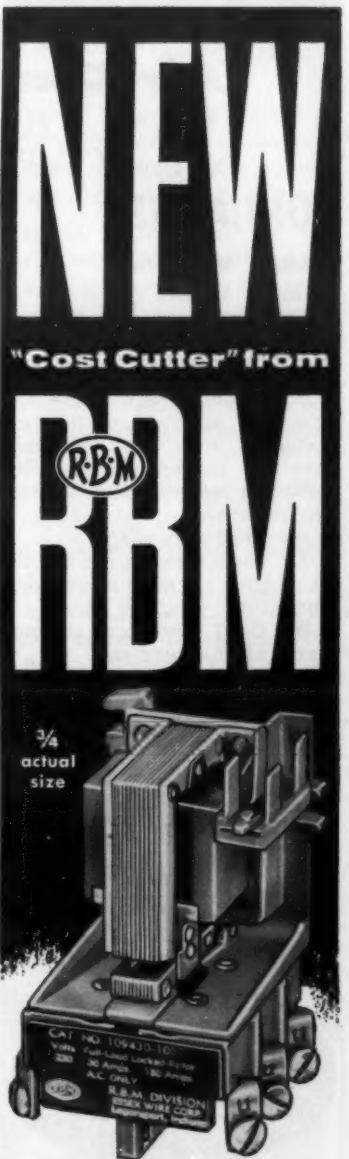
The Beverage-Air Co.—Appointment of HARRY B. EBY as sales representative for the southern New Jersey and eastern Pennsylvania territories has been announced.

The Trane Co.—Seven new firms have been appointed authorized sources of Trane package air conditioning equipment. They are PAM OIL CO., INC., Brooklyn; NORTH SHORE SHEET METAL CO., East Northport, N. Y.; TIRICO REFRIGERATION SERVICE and KYTE HEATING & AIR CONDITIONING CORP., Long Island, N. Y.; CORONA HEATING CO., Evansville, Ind.; ART CAMPBELL, Philadelphia; and PAGE SHEET METAL, INC., Weymouth, Mass.

Unitary Equipment Div., Carrier Corp.—Designation of POWER ENGINEERING CORP., Vestal, N. Y., as distributor in eight counties of the Southern Tier of New York has been announced. The franchise includes the complete Carrier line of commercial, industrial, and residential packaged air conditioning in addition to the larger applied systems which the firm has distributed for several years.

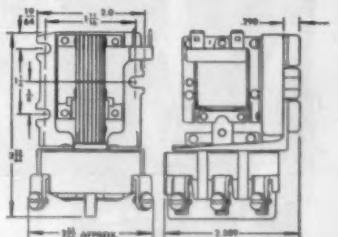
Buensod-Stacey, Inc.—PALLER ENGINEERING CO., Fort Wayne, Ind., has been named representative for Buensod dual-duct air mixing units and other air conditioning equipment in that city. The firm also represents Buensod-Stacey in Indianapolis.

Heil-Quaker Corp.—MATTAPAN SUPPLY CO., Mattapan, Mass., has been appointed distributor for Heil central heating and air conditioning units, marking Mattapan's entry into warm air heating and central air conditioning. Mattapan Supply and its branches—Portland Pipe & Fittings Co., Boston; Webb Supply Co., Framingham; and Riverside Pipe & Supply Co., Medford—will service Heil dealers in the eastern third of Massachusetts and most of New Hampshire.



## Type "S" 30 Amp. Air Conditioning Contactor

Exceeds rigid requirements of industry's largest users. Application proven for long life... trouble-free performance. Positive contact action. No "kiss" position. Can be made to mount in any position. UL Approved-File No. E-12139.



### SPECIFICATIONS

Contact ratings	30 Amp. continuous, 180 Amps inrush at 230 volts.
Contact terminals	Screw type.
Coil terminals	Double quick connect, screw type, or lead wires.
Coil rating	6 to 230 V.A.C.—50/60 cycles.
Pole arrangement	2 or 3 poles (2 dummy wiring terminals available on 2 pole device).

Consult your RBM Product Application Engineer or Write for Bulletin C-8.

**RBM**  
DIVISION  
ESSEX WIRE CORPORATION  
Logansport, Indiana

## SALES REPRESENTATIVE

Leading national manufacturer of residential heating and air conditioning equipment desires representatives between ages of 25 and 35 to cover State of Kansas. Men selected must be familiar with field, be aggressive and have wide acquaintance in trade. Attractive salary, expenses and incentive plan plus full fringe benefit program will make position attractive to right man. Write, giving full details to:

Personnel Manager  
Mueller Climatrol  
P. O. Box 401  
Milwaukee 1, Wisconsin



## Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

### PONTIAC (3)

Pontiac Motor Div.  
General Motors Corp.  
Pontiac 11, Mich.

#### Trouble Chart

Readings of temperatures and pressures observed in the performance tests just described may be checked against the following to diagnose service problems.

##### Insufficient cooling.

A. Insufficient air flow due to plugged air filter or evaporator.  
B. Cowl ventilators allowing warm air to enter car.

C. Heater and/or air control not turned off.

D. Nozzle temperature too high. (See Nozzle temperature too high and Suction pressure too high.)

##### Head pressure too high.

A. Engine overheated.  
B. Condenser air flow blocked.

C. Air in system.

D. Overcharge of refrigerant.

#### New Manual Ready Soon Likewise New Series

Readers who have been following closely this second NEWS series on automobile air conditioners, which is concluding with this installment, will be interested to know that:

(1) The second volume will be reprinted in handy manual form within a few days;

(2) Some copies of the first volume covering earlier models are still available;

(3) The third series on latest units will be starting soon in the NEWS.

So if you have any interest in automobile air conditioning, don't fail to order your copy of Vol. 2 (price \$2) plus a copy of Vol. 1 (same price) if you happened to miss it or mislay it, and be sure to keep up your subscription to the NEWS to get information on the newest models.

erly adjusted.

B. Restricted inlet screen in expansion valve.

C. Restriction in lines.

Nozzle temperature too high.

A. Air leak at seal between end of hood and cowl.

B. Air inlet filter housing-to-evaporator rubber boot not properly installed over end of filter housing or evaporator housing.

C. Shortage of refrigerant.

D. Expansion valve improperly adjusted.

E. Thermostat inoperative or operating improperly.

F. Evaporator icing up.

G. Compressor operating improperly.

Nozzle temperature too low.

A. Expansion valve improperly adjusted or defective.

B. Thermostat improperly adjusted.

C. Insufficient air flow.

#### Adjusting Expansion Valve

Superheat setting of the thermostatic expansion valve employed on 1956 Pontiac systems can be adjusted in the field. The 1957 valve is non-adjustable.

Turning the adjusting stem clockwise on the 1956 expansion valve increases the superheat setting and reduces the flow of refrigerant to the evaporator. Turning the adjusting stem counter-clockwise decreases the superheat setting and increases flow of refrigerant to the evaporator.

#### Adjusting Thermostat

Thermostat employed on 1957 Pontiac systems (Fig. 9) has two adjustments.

An adjusting screw on top of the thermostat varies the opening of the thermostat contact points. This opening should be .006 in. to .010 in.

Another adjusting screw on the side of the thermostat permits adjustment of the temperature range. Turning this screw clockwise raises the temperature setting of the thermostat; turning the screw counter-clockwise lowers the setting.

(The End)

### Reading Tube Builds Copper Refinery In Pennsylvania

NEW YORK CITY—The first copper refinery built east of the Mississippi River in a half century has been brought on stream, it was announced recently by Martin Mack, president of Reading Tube Corp.

The step results from the beginning of commercial production of billets at the electrolytic copper refinery of Reading Metals Refining Corp., a wholly owned subsidiary of Reading Tube. The new plant, presently approximately 100,000 sq. ft., is located on a 16-acre site in Ontelaune Township, Pa. An additional 79 acres are available for future expansion.

Mack pointed out that the addition of the refinery represents a major step in the further integration of the copper tube manufacturer, and it affords closer control over the quality of its billets. The new refinery makes possible Reading's participation in all steps in the copper fabricating business from blister or scrap copper to finished products, he said.

## You Asked About It

Q. The June 2 issue of the NEWS carried an unanswered question having to do with adding a receiver to an existing system consisting of two 94G General Electric compressors connected in parallel. Original G-E shell-and-tube condenser had a 30-ton capacity. Units operated a flooded type popsicle tank and two Vogt continuous flow freezers.

When popsicle tank was not in use for a while, liquid eventually all pumped out of this unit creating a need for an extra receiver.

A. From Santa Ana Refrigeration, Santa Ana, California, Austin O. Hicks replies that part of the difficulty experienced by the questioner was due to a misunderstanding of the term parallel with reference to the condenser-receiver hookup. "Two condensers or a condenser and a receiver with a common hot gas line and a common liquid line are not truly parallel within the framework of this application's needs," Hicks suggests.

Even shutting down the flooded part of the system would not eliminate the overfull condenser-receiver problem, he says.

"To create a proper parallel hookup, a receiver would require that the liquid from the condenser to receiver have a passage of sufficient cross-section to permit free flow of condensed liquid and counterflow vapor for pressure equalization between

the condenser and receiver.

"Two condensers may be connected to a receiver in this manner, even if additional vapor equalizing line from top of receiver to inlet of condenser or condensers be required.

"Most important," Hicks feels, "do not be too Scotch when providing size of lines.

"Equalizing lines are mentioned simply because it is doubtful if existing connection fittings are adequately sized to accommodate desired results. It is further suggested that your receiver be installed below condenser outlets. In this manner you achieve free drainage of condensed refrigerant to a common receiver from each condenser and have maximum condensing surface always available.

"A final suggestion: also parallel your water circuits," concludes Hicks.

Following up with the original questioner, the NEWS found that the company felt its past troubles had been "very likely due to the fact that we did not run large enough lines."

On this specific installation, they inserted the additional receiver into the liquid line in such a manner that the liquid outlet from the shell-and-tube condenser feeds into the receiver and the outlet of the receiver becomes the supply for the total system. A gas equalizing line runs from the top of the receiver to the top of the shell-and-tube condenser.

Send for FREE  
Booklet  
describing



### SHAFTS by MODERN

Uniform in quality, precision machined to closest tolerances, Shafts by MODERN now power compressors for the nation's leading lines of refrigeration and air conditioning units.

**MODERN MACHINE WORKS, INC.**

Manufacturers of Crankshafts, Eccentric Shafts, and Straight Shafts SINCE 1924

5354 S. KIRKWOOD AVENUE • CUDAHY, WISCONSIN

### Watch for it next week--

Beginning the series, "A Report on Education" by Frank J. Versagi, NEWS Technical Editor—

A complete, comprehensive evaluation of our industry's schools and training programs—of interest at all levels.

#### 1. MANUFACTURERS

What do dealers think of your factory schools? Are they effective? What do college educators want from you?

#### 2. SERVICEMEN

Are your servicemen adequately trained? How much advance training is available? Is there a real shortage?

#### 3. BEGINNERS

What kind of school should you attend? How long a training program? Apprenticeship programs?

These and many more questions are answered by Mr. Versagi in his "Conscience of the Industry" reporting—based on personal interviews with astute evaluation of methods and results.

**MIGHTY MITE**  
THERMAL PROTECTORS

FOR  
MOTOR  
OVERLOAD  
PROTECTION

**MECHANICAL INDUSTRIES**  
PRODUCTION COMPANY  
223 ASH STREET • AKRON, OHIO

**4**  
Ways  
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Gives  
You  
**MORE**  
yours  
for the  
asking!

- Industry's Only Blower Bearing with Built-in Journal**  
Lighter loading, longer life.
- Industry's Only Interchangeable, Non-flexing Wheels**  
9" through 15" sizes; for quiet hi-speeds.
- Industry's Most Advanced Private Research Facilities**  
At your disposal for air development problems.
- Industry's Best Technical Information Service for Design Engineers**  
All you need to know about air movement.

### VIKING AIR PRODUCTS

5601 Walworth Ave.  
Cleveland 2, Ohio

9" through 15" Blowers,  
Blower Wheels,  
Furnace Humidifiers

Gentlemen: Please send me more information about item 1 2 3 4\*  
\* Put me on the mailing list.

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Title \_\_\_\_\_  
Firm \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_



## Crider Publishes Heat Pump Manual

CLEVELAND — "Practical Application Manual for Heat Pumps" has been published here recently by T. G. Crider, director of air conditioning and heat pump design for Perfection Industries, division of Hupp Corp.

The manual is a complete study covering special heat loss and heat gain tables, special applications, installation, performance and operating cost data, wiring instruction, service, and a variety of other topics.

While the information applies specifically to Perfection's air-to-air models PAS 21AH, 31AH, and 50 H, most of the suggestions and recommendations have general application to all air-to-air heat pumps.

The manual is being sold at \$1 per copy.

## NAPC Studies Merger--

(Concluded from Page 1, Col. 3) until sometime this fall, NAPC said.

In preparation for the meeting, NAPC President John M. Rhoades has sent a letter to all state and local presidents asking for their comments and those of the membership on the proposed merger.

He directed that all letters be sent to NAPC headquarters here. Copies will be made and sent to each member of the committee for guidance in committee deliberations.

The committee is headed by Philip M. Hering, Jr. of Philadelphia. Members are H. Merwin Porter of Minneapolis, Wilbur S. Hokom of Beverly Hills, Calif., Walter E. Eynon of Canton, Ohio, and G. Allen Briggs of Oak Park, Mich.

The committee is also charged with studying possible affiliation of NAPC with the Council of Mechanical Specialty Contracting Industries, Inc. The Council includes MCA, the Na-

tional Electrical Contractors Association, the Sheet Metal & Air Conditioning Contractors Association, plus individual contractors.

A statement in the Council's publication "The Conciliator" to the effect that NAPC had ordered the committee to arrange for affiliation with the Council was denied by Rhoades.

He emphasized that the committee was only empowered to study the idea and make a recommendation. The board of directors would make the final decision. In a letter to Council President Fred Williams, he asked that the Conciliator retract its statement.

He also objected to a Conciliator inference that NAPC membership did not support its directors' opposition to HR 7168, the so-called "bid-shopping bill" now before Congress. Rhoades said that the board's stand was supported and was reaffirmed by the new directors.

## Educational Eightball?--

(Concluded from Page 1, Col. 3)

The effectiveness, costs, and other basic data for each type of school are related to their value for the industry. Versagi discusses teaching techniques, methods of student testing, job placement, and the general role of industry.

This series is of obvious interest to all segments of the industry, but particularly to manufacturers who are not only responsible for dealer and service training, but who also must fill top administrative and technical positions within their organizations.

A comprehensive educational study such as this for our industry has never before been attempted, much less accomplished. It is of vital interest to everyone who makes his living from heating and cooling.

The editorial page today discusses the question, "Is there actually a shortage of industry engineers?", and draws some thought provoking conclusions for the industry to ponder.

Watch for this series beginning with the Aug. 18 issue. It is the type of industry problem-solving reporting for which the NEWS editorial staff is famous.

## Weather --

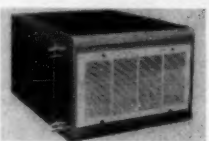
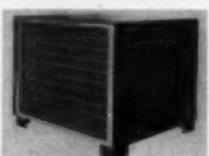
(Concluded from Page 1, Col. 3) ington, D. C. to Memphis to Kansas City) will average below season normals.

Near normal temperatures will be found in Nevada and adjacent areas and in a narrow band running from Minnesota to Oklahoma, then swinging southeastward to New Orleans and up the Appalachians to Chesapeake Bay.

**U.L. & A.S.M.E. WATER-COOLED CONDENSERS** 1/2 TON to 15 TONS  
and  
**LIQUID RECEIVERS** for  
**EVERY REQUIREMENT**  
**STANDARD REFRIGERATION CO.**  
6034 W. North Ave.  
Chicago 39, Illinois

*White for our NEW Catalog*

MAKE IT SIMPLE



MAKE IT PAY

You can have a proper margin of profit when you install air conditioning the easy "Comfort-Aire" way. Five full capacity models give you the wide range necessary to solve every job.

Units are guaranteed to be of the highest quality. Compact—efficient—and noiseless. Designed to meet FHA requirements. Equipped with Tecumseh compressors. Extra large centrifugal blowers deliver volumes of low velocity air. UL approved.

Drop us a line for a copy of specifications that prove the point.

**Comfort-Aire**  
HEAT CONTROLLER, INC.  
JACKSON, MICHIGAN

## MCAA Merger Study Committee--

(Concluded from Page 1, Col. 4) ciations wanted made known," Spitzley said in explaining the significance of the meeting.

"It is obvious that extensive planning will be necessary before a proposal can be made to consolidate the two associations, but we feel that the unanimous vote of the convention directing this study is indicative of the hopes of our members that a workable plan will be developed that will insure a strong unified national association better able to serve the interests of mechanical and other related contractors," he indicated.

"This meeting was designed to study the various points that will have to be resolved before a plan for consolidation can be achieved," Spitzley pointed out.

"The great interest in this development can be seen from the attendance of representatives of affiliated local associa-

tions from all points of the country. The meeting has been productive because our Merger Study Committee is now more familiar with the aims and hopes of a cross section of our association's members."

In addition to chairman Spitzley, immediate past president of MCAA, the MCAA Merger Study Committee is composed of Thomas L. Eagan, Washington, D. C., a former president of MCAA; S. Austin Pope, Chicago; John N. Scanlon, New York City; and Wray M. Scott, Omaha, also a former president of the national association.

The advisory committee was composed of Paul H. Kroeschell, Chicago; Robert B. Miller, New York City; Maurice Goldring, St. Louis; B. Y. Kinzey, Richmond, Va.; Fred Brenner, Milwaukee; and Fred E. Wendel, New Jersey.

Also in attendance at the meeting were Horace E. Wetzell, Cleveland, president of MCAA; Lloyd B. Gruman, Jr., national secretary; Joseph C. Fitts, consultant to MCAA; Lloyd V. Almirall, legal counsel; Edward R. Teske, executive secretary, Chicago; and Walter H. Oleson, executive vice president, Milwaukee association.

## Bernard Tobin Dies

BROOKLYN—Bernard Tobin, sales engineer for C.D.E. Air Conditioning Co. here, passed away July 10 at the age of 34. He is survived by his wife, Helene, and infant son, Daniel. Tobin has been in the industry for 10 years, the last four as a sales engineer for C.D.E.

## MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.  
PRESSURE GAUGES and Dial Thermometers for all services.  
MARSH-ELECTRIMATIC Water Regulating Valves, Solenoid Valves.  
MARSH INSTRUMENT COMPANY  
Sales Affiliate of J. P. Marsh Corporation  
Dept. D, Skokie, Ill.

PREVENT THE LOSS OF COSTLY REFRIGERANTS

## ... use leaktight FLEXON VIBRA-SORBERS®

Flexon Vibra-Sorbers are economical insurance against the failure of rigid compressor piping due to vibration ... and the resultant loss of costly refrigerants.

Vibra-Sorbers are all metal construction, extremely resistant to corrosion and fatigue, remaining leaktight throughout their long life.

Genuine Flexon Vibra-Sorbers are U.L. listed in sizes 3/8" through 1 1/2" for both high and low side service. Larger diameters to 8" available. Write for Bulletin 139.

### NOW AVAILABLE FROM FLEXONICS

Flex-O-Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Also, flexible metal connectors for circulating pumps. Write for information.

**Flexonics Corporation**  
3415 S. Third Avenue  
Maywood, Illinois

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.  
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

**NOW... FROM REMCO MOLECULAR SIEVE FILTER-DRYERS with DEPTH FILTRATION**

REPLACEABLE CARTRIDGE TYPE  
SEALED TYPE  
"T" FITTING TYPE

Utilizing advanced design Molecular Sieve cartridges, these new Remco Filter-Driers combine unequalled drying efficiency, effective acid removal, generous flow capacity and depth filtration.

The massive depth filter completely removes all scale, sludge, carbon and other particles as small as 100 microns. Molecular Sieves adsorb and retain large quantities of moisture even at refrigerant temperatures of 140F, and keep moisture concentrations below 10 ppm. Acids are reduced far below dangerous corrosion limits.

Compact in size, the filter-driers are U/L Approved and may be used for Refrigerants 12 or 22, Carrene or methyl chloride. Working pressure is 500 psi; minimum bursting pressure, 2500 psi.

REPLACEABLE CARTRIDGE TYPE units use an "O" ring for a positive, leakproof flange seal. From 3 to 40 tons, with 3/8" thru 1 1/2" sweat connections.

SEALED TYPE filter-driers are available in 1 to 12 tons, with 1/4" thru 3/8" flare and 3/8" thru 1/2" sweat connections.

"T" FITTING TYPE in 2 to 6 tons, are readily adaptable to systems using conventional "T" driers.

Remco Molecular Sieve Filter-Driers are available at leading wholesalers. Ask your wholesaler for more information, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

**REMCO**

MANUFACTURERS OF ADVANCED REFRIGERATION PRODUCTS  
Filter-Driers · Liquid Indicators · Receiver-Driers · Check Valves · Safety Devices · Frost-Tite Flare Nuts



## Refrigeration Problems And Their Solution

(As Written by Paul Reed)

### Electric Solenoid Valves (6)

Due to the low current consumption of solenoid valves, it is a bit difficult to protect them against burn-out. Time delay fuses (Fuses) are useful for this purpose; and in the larger sizes of solenoid valves, overload relays are applicable.

1. Low voltage. One of the most common causes of failure to open.

2. Dirt, gum, soldering acid, solder, or other foreign material in the valve. Another very common cause of failure to open (also to stick open).

3. Excessive pressure differential across the valve.

4. Valve not installed in a vertical position. Solenoid valves are designed for vertical position only, and will not perform satisfactorily on a slant.

5. Poor contacts of the pressure control, thermostat, or other device actuating the valve.

6. Improperly connected. Even though the solenoid valve requires very little wattage, it must be connected in parallel to other current consuming devices. Never connect a solenoid valve in series with another solenoid, a fan motor, or the holding coil of a magnetic starter. (This latter is a common error.)

Chattering of a solenoid valve is usually caused by one of the reasons given above for "Failure to Open." Flash gas may also cause

chattering in the liquid line solenoid valves.

1. High voltage is one of the most common causes of excessive heating of the coil. The voltage should not be more than 10% above rated voltage of the coil. Even 5% over-voltage in combination with one or more of the following other causes of overheating, can cause excessive heating of the coil.

2. Under-voltage may also cause the solenoid coil to overheat. The excessive amperage resulting from under-voltage causes overheating of the coil.

3. Dirt, gum, or other foreign matter in the system, that may cause sticking of the internal parts of the valve, or that prevents the plunger from centering in the coil, can cause overheating of the solenoid valve coil.

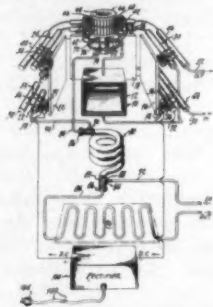
4. Due to intermittent formation of frost or ice on the valve, and its thawing, the coil may become damp and allow electrical leakage which causes the coil to overheat. The coils are impregnated when they are manufactured, but it is difficult to prevent them from absorbing some moisture under abnormal conditions.

If not in too bad a condition, a damp coil can be baked dry at about 125°, and then resealed with motor varnish. For small solenoids, it may be found cheaper to replace the coil with a new one.

## PATENTS

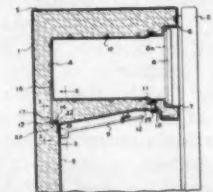
Week of June 10

2,837,999. THERMOELECTRIC REFRIGERATOR. Nils E. Lindenblad, Princeton, N. J., assignor to Radio Corp. of America.



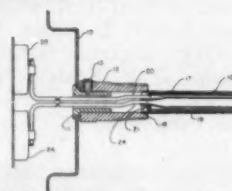
1. A thermoelectric refrigerator comprising an array of thermocouples providing hot junctions and cold junctions, means for circulating a heat transfer fluid in heat exchange relationship with said hot junctions to carry away the heat rejected at said hot junctions, means for circulating a heat transfer fluid in heat exchange relationship with said cold junctions to supply heat to be absorbed by said cold junctions thereby cooling said fluid, another array of thermocouples providing additional hot junctions and cold junctions.

2,837,900. REFRIGERATOR FROZEN FOOD COMPARTMENT MOUNTING STRUCTURE. Harold P. Harle, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



1. A refrigerator comprising an outer casing, a food storage liner within said casing, a frozen food evaporator mounted above said liner, a mounting structure for mounting said evaporator above said liner comprising a pair of thermal insulating spacers secured to the bottom of said evaporator adjacent the front thereof.

2,837,918. TEMPERATURE SENSING ELEMENT. Arthur L. Good, Elkhart, Ind., assignor to Penn Controls, Inc., Goshen, Ind.



A dual thermal responsive bulb assembly adapted to independently accommodate the thermally sensitive fluid for a dual fluid pressure transmitting system comprising an elongated tubular outer bulb having one closed and one open end, an inner bulb generally concentric with said outer bulb and coextensive therewith, one end of said inner bulb being in supporting engagement with the closed end of said outer bulb.

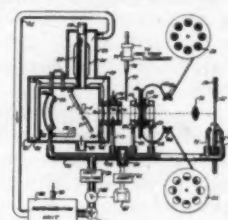
2,837,968. PROJECTOR COOLING SYSTEM. Alfred H. Goldsmith, New York, N. Y., assignor to Radio Corp. of America.

1. A film projecting system comprising a light source, said source being

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

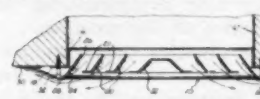
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D.C.

adapted to heat a circulating fluid, a housing for said light source, means associated with said housing for collecting and directing said circulating



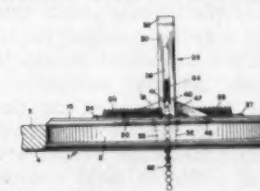
fluid, means for forming light from said source into a beam, means for passing a film through said light beam, a heat energized refrigeration unit.

2,837,990. AIR DIFFUSER. Richard D. Tutt, New Britain, Conn., assignor, by mesne assignments, to Allied Thermal Corp., New Britain, Conn.



1. In an air diffuser of the type for use with an air duct outlet in a wall surface and having a plurality of spaced apart generally frusto-conical inner vanes for deflecting air laterally from the axis of said outlet, an anti-slag ring extending about the periphery of the diffuser and forming throughout a continuous, smoothly curved, uninterrupted connecting surface between the diffuser and the wall surface.

2,837,991. DAMPER CONSTRUCTION FOR AIR OUTLETS. William C. De Roo, Holland, Mich., assignor to Hart & Cooley Mfg. Co., Holland, Mich.



1. A damper construction for ceiling diffusers and the like comprising, a frame member having an opening therethrough for the passage of air, a pair of opposed damper blades mounted for pivotal movement along the adjacent edges thereof toward each other and away from said frame to open position, and away from each other toward said frame to closed position.

2,838,006. FLOW CONTROL VALVE. Jack J. Booth, Dallas, Texas.

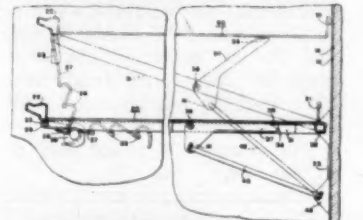
1. In a heat exchanger for pre-conditioned beverages having a beverage cooling tank and pick-up tube provided with a delivery valve, a flow control device in the cooling tank between

the pick-up tube and the delivery valve comprising an elongated body in separable, longitudinally aligned tubular sections, one of the sections having a



bore of greater diameter than the bore of the companion section and axially aligned therewith.

2,838,357. VERTICALLY ADJUSTABLE REFRIGERATOR SHELF. Lester M. Miller, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



8. In a cabinet provided with a plurality of walls forming a compartment therein, a shelf within said compartment, means for supporting said shelf in said compartment and for varying the height thereof while supported therein, said means comprising opposed stationary shelf supports at the front of said compartment, a rail extending along each of the compartment side walls.

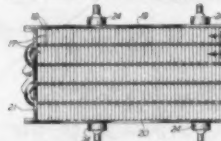
### DESIGNS

183,002. SPACE CONDITION RESPONSIVE INSTRUMENT. Robert Haven Hoss, Mountsides, N. J., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



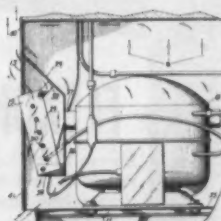
### Week of June 17

2,838,830. PROCESS OF MANUFACTURING HEAT EXCHANGER. Homer D. Huggins, Racine, Wis., assignor to Modine Mfg. Co., Racine, Wis.



6. In a process of manufacturing a heat exchanger, the steps comprising flattening the opposite side walls of a heat exchanger tube, positioning a heat exchanger fin in contact with each of said walls of said tube, applying pressure at the interior of said tube for expanding said tube toward said fin, and retaining the combined dimension of said tube and said fin while said tube is being expanded.

2,838,917. REFRIGERATION CABINET. Harold R. Smithson, Westtown, Pa., assignor to Esco Cabinet Co., West Chester, Pa.



1. In a refrigerating apparatus, the combination comprising a freezer cabinet providing an enclosure, a refrigerant conduit section mounted upon the wall structure of said cabinet exteriorly of the inner surface thereof and in heat exchange relationship with the atmosphere.

(To Be Continued)

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**AMBITIOUS YOUNG** heating - air conditioning sales engineer, 5 years' experience calling on distributors and dealers (sales and service). Experience includes both practical and theory. Well versed in heating and cooling applications. Desires association with manufacturer, preferably in the mid-west. Would consider a good distributor's offer. BOX A6081, Air Conditioning & Refrigeration News.

**EXPERIENCED REFRIGERATION** salesman familiar with all phases of refrigeration layout and supermarket planning seeks position as field representative for manufacturer or store engineer with chain or wholesaler. New England area preferred. BOX A6082, Air Conditioning & Refrigeration News.

**ADVERTISING MANAGER**-10 years' successful experience advertising, sales promotion, marketing of heating and air conditioning at retail, wholesale, and national (blue chip) levels. Seek similar spot with aggressive manufacturer. Top references. 35, married. Will relocate. BOX A6084, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

**DISTRIBUTORS WANTED** for spun glass type filters. Complete line of standard and special sizes. D. F. BOWMAN CO., INC., P. O. Box 23, New Albany, Indiana.

**TWO OR three** zone managers are needed for a growing sales organization by a commercial refrigerator manufacturer. Men who are selling refrigerators to food chains, super markets, wholesale grocers or refrigeration dealers would have preference. They might presently be refrigeration distributors or associated with a refrigerator manufacturer—but desirous of improving their situation by locating elsewhere or simply anxious to cash in on experience and make more money. If you are one of these men,

write John S. Twist, vice president of sales, SHERER-GILLET CO., Marshall, Michigan.

**SALES ENGINEERS**—Air conditioning company, committed to doubling national sales force in next two years, has immediate openings for sales engineers with ultimate opportunity to become branch managers. Openings available in any section of country. Successful sales experience definite requisite. Salary and commission. Replies confidential. BOX A6075, Air Conditioning & Refrigeration News.

**HELP WANTED**—A national manufacturer of air conditioning and heating requires district sales manager. Applicant should be well qualified to work with distributors and dealers. Some travel. All replies held in confidence. Reply to BOX A6072, Air Conditioning & Refrigeration News.

**APPLICATION ENGINEER**—National manufacturer of residential, commercial and industrial air conditioning and air handling equipment requires junior sales application engineer with several years of experience at its home office in western Pennsylvania. Splendid opportunity for advancement. Send full details of education and experience to BOX A6083, Air Conditioning & Refrigeration News.

### EQUIPMENT WANTED

**WANTED TO buy.** Used store and market equipment such as meat cases, dairy cases, produce cases, frozen food cases, walk-in-coolers, condensing units. Describe and give price on each item offered. Write BOX A6079, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

**MODEL HH 2 h.p.** automobile air conditioning compressors tapered shaft, vertical mount, complete with flywheel \$38.95. Send for free circulars and catalogs on money saving refrigeration & air conditioning parts and supplies. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

### BUSINESS OPPORTUNITIES

**OWNER RETIRING.** Small old established refrigeration and air conditioning sales & service business for sale at low price. Tremendous potential. In fine university town of 40,000—only 20 miles to Denver—at foot of Rockies. O.K. JOSEPH REFRIGERATION, Boulder, Colo., Phone HI 2-5537.

## FOR SALE AT BIG SAVINGS

### NEW WELL-KNOWN BRAND FREON MOTOR COMPRESSORS

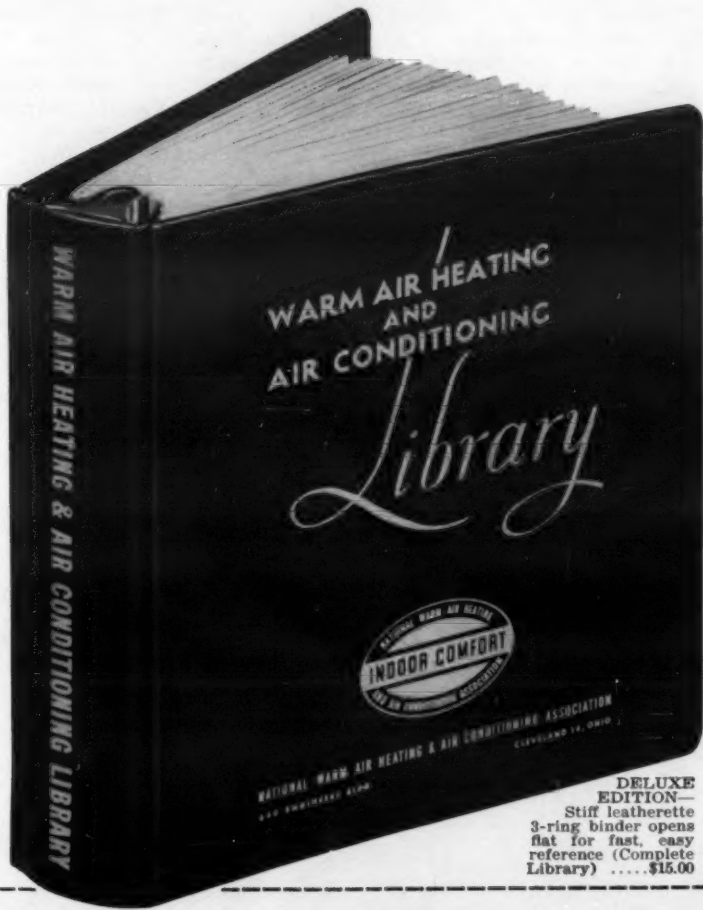
Quantity	Horsepower	Volt	Cycle	Price
98	1/2	115	60	\$20.00 each
118	3/4	115	60	\$23.00 each
33	3/4	230	60	\$23.00 each
7	3/4	230	60	\$23.00 each
46	1	230	60	\$27.00 each

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.....\$.40 each; 1,001 and more copies.....\$.35 each.

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Designing forced warm air systems for houses up to 120,000 B.t.u.h. heat loss. . . . Selecting furnace, blower, duct, and register size. . . . Locating registers and return intakes. . . . System layouts. . . . Installation and operation. (4th Edition)

**Manual 7A—Design and Installation of Warm Air Ceiling Panel Systems..... .75**  
For residential and small non-residential structures with heat losses not exceeding 120,000 B.t.u.h. . . . Furnace and blower size. . . . Lay out of panel inlets and outlets. . . . Supply and return systems. . . . Panel construction. (3rd Edition)

**Manual 8—Application Guide for Residential Central Air Conditioning Systems (Winter and Year-Round) ..... 1.50**  
Components of winter and year-round air conditioning systems. . . . Proper operation. . . . Good design and installation practices cited and illustrated. . . . Use it to sell "quality" systems (5th Edition)

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Systems for residential, commercial, industrial and public buildings. . . . Also for structures where single-unit heat loss does not exceed 250,000 B.t.u.h. and where heat gain does not exceed 1.3 times sensible heat gain. (6th Edition)

**Manual 9 Supplement ..... .50**  
Perimeter warm air heating and ventilating systems for buildings constructed on concrete slab floors. . . . Can be used to encourage architects, heating engineers, and school boards to use perimeter systems. (1st Edition)

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Design and installation of systems using 4-inch round pipes for warm air runs. Systems described are "low velocity". . . . May be used with furnaces rated at total static pressure of .20" water gauge or comparable rating at sea level with temperature rise range of 70°-100° F. through furnace. (4th Edition)

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## Holland Furnace Decision--

(Concluded from Page 1, Col. 2)  
James A. Purcell's initial decision of Oct. 23, 1957, and adopted this decision as its own.

It upheld the examiner's ruling that Holland's false claims and improper business methods have caused many owners to discard competitive furnaces prematurely in fear of grave danger from continued use of this "condemned" equipment.

The Commission ruled that the examiner's findings are copiously supported by the record, among them these:

Various of the company's

house-to-house canvassers have falsely claimed to be representatives of the Government and public utilities, while others misrepresented themselves as "heating engineers."

To get leads, Holland distributes advertising material offering free inspections, adjustments, and minor servicing of furnaces. Those responding are solicited for cleaning and servicing jobs which, in turn, often lead to sales of major equipment through misrepresentation.

For example, Holland's salesmen falsely claim it is necessary to dismantle furnaces to determine the extent of repairs necessary. They then refuse to reassemble them when requested, misrepresenting that this would involve grave danger of fire, gas, and explosion.

In other instances they falsely state that competitive fur-

naces have passed their useful life and are not worth the expense involved, or that the manufacturer is out of business and replacement parts are unobtainable. Some of the furnaces condemned by these agents were proved to be either in safe condition or safely repairable.

Holland frequently has been guilty of breach of contract through failure to reassemble furnaces within the 48 hours provided in the agreement signed by customers. Occasionally furnaces are reassembled only when the customers sign a release absolving Holland and its employees of any liability, including that for negligence of the employees. Often these releases are signed because of false representations as to their intent and character, and sometimes owners sign them under duress in order to restore heat, obtain refunds, or be released from contracts procured through falsity.

Holland contended that the Commission lacks jurisdiction in that the company's branches (475 branch offices plus a number of subbranches extending throughout the country with the exception of three of four Deep South States) are construction contractors not engaged in interstate commerce. Pointing out that it does not ship furnaces as units but sends materials and parts to central or branch warehouses, Holland argued that, upon arrival, interstate commerce ceases and the challenged practices occur within a given state.

Rejecting this contention, the Commission said: "The heating equipment involved is manufactured in Holland, Mich., and shipped from there and sold by respondent's authorized representatives on a nationwide basis in some 45 states through respondent's own retail outlets. A realistic view of respondent's activities in moving its products

from Michigan across state lines to accomplish its stated purpose of direct sales to ultimate consumers through '500 Direct Factory Branches Serving Over 15,000,000 Customers' admits of no other conclusion than that respondent is engaged 'in commerce.'

"Contracts between respondent and branch managers and salesmen; correspondence between the home office in Michigan and field personnel; those contracts between respondent's salesmen and the purchasing public on respondent's behalf which must be accepted by the home office; and representations made by salesmen in selling respondent's products—all are part and indicate a pattern of conduct in commerce within the meaning of the Federal Trade Commission Act."

In addition, the opinion noted, the record shows that a number of Holland's branches made out-of-state sales or deliveries.

## Dayton Strike--

(Concluded from Page 1, Col. 5)

"This is a serious matter for public concern—not only because several hundred workers engaged in the plumbing industry are now suffering the loss of wages at a time when our economy can least afford it—but more important because a strike of any duration might well pose a serious threat to the health and well-being of the residents of Dayton and surrounding areas. For these reasons the Dayton Association of Plumbing Contractors feels that you, the citizens of our community, are entitled to the facts at the very outset of this controversy."

Sole issue which resulted in the work stoppage, said the Dayton contractors, is a demand by the union for almost unprecedented increases in the form of fringe benefits. The advertisement then spelled out the weekly wage of the journeyman plumber for a 40-hour week, and the contractors' last offer, which included the establishment of a health and insurance plan and a system of paid holidays (both innovations in the Dayton area) in addition to hourly wage increases on a step-up basis through 1960.

However, the contractors' statement said that the union was holding out for fringe benefits of such a magnitude that "there is a strike today because local plumbing contractors cannot absorb this much of an increase and continue to operate their business successfully. The only other alternative—the popular method and one proposed by the union to pass the increase on to the public. To this we are inalterably opposed."

The advertisement concluded with the following statement:

"Yes, the loss of wages in a struggling economy and the curtailment of a service so vital to public health is a serious matter. We can do nothing to recover the loss of wages. We can, however, and will do something about any threat to the health of the local citizenry."

"Should an emergency involving any aspect of plumbing arise in your home or business establishment, we of the Dayton Association of Plumbing Contractors will make every effort humanly possible to eliminate any hazard and provide safe and healthful conditions throughout this strike."

"Please consult the Yellow Pages of your phone directory under Plumbing Contractors for a listing of our members."



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